



2010

Fourth National Report on Human Exposure to Environmental Chemicals *Updated Tables, July 2010*



**Fourth National Report on Human Exposure to
Environmental Chemicals, Updated Tables,
July 2010**

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These *Updated Tables* provide nationally-representative biomonitoring data from the 2005-2006 survey cycle of the National Health and Nutrition Examination Survey (NHANES) for 51 of the environmental chemicals measured in the *Fourth Report on Human Exposure to Environmental Chemicals* (released in December 2009), covering NHANES 1999-2004. The *Updated Tables* are cumulative, containing all the results from previous survey cycles (1999-2006).

In addition, six new chemicals are reported for the NHANES 2005-2006 survey period, including data tables on four parabens (butyl, ethyl, methyl, and *n*-propyl parabens) and two phthalate metabolites (mono-[carboxynonyl] phthalate and mono-[carboxyoctyl] phthalate). A link to chemical information about the parabens is provided at the top of each parabens data table page. Two appendices are updated to include information pertinent to these six chemicals as well as the other chemicals included in the Updated Tables (Appendix C. References for Biomonitoring Analytical Methods; Appendix D. Limit of Detection Table).

The chemicals included in this update are listed below. Click on the chemical of interest to view the *Updated Table*.

The *Report* website is the best resource for the most recent updates of available data (<http://www.cdc.gov/exposurereport>). The *Report* website also contains details of the Data Sources and Data Analysis, Interpretation of *Report* Data, and Chemical and Toxicological Information that pertain to the *Updated Tables*.

Chemicals in the *Fourth Report: Updated Tables, July 2010*

CDC's *Fourth National Report on Human Exposure to Environmental Chemicals: Updated Tables* provides exposure data on the following chemicals or classes of chemicals. The updated tables contain cumulative data from national samples collected in 1999-2000, 2001-2002, 2003-2004, and new data added from 2005-2006. Not all chemicals were measured in each national sample. The data tables are available at <http://www.cdc.gov/exposurereport>. An asterisk (*) denotes a chemical presented for the first time in the 2005-2006 survey period.

Cotinine	
Environmental Phenols	Perfluorochemicals
Benzophenone-3 (2-Hydroxy-4-methoxybenzophenone)	Perfluorobutane sulfonic acid (PFBuS)
Bisphenol A (2,2-bis[4-Hydroxyphenyl] propane)	Perfluorodecanoic acid (PFDeA)
4- <i>tert</i> -Octylphenol (4-[1,1,3,3-Tetramethylbutyl] phenol)	Perfluorododecanoic acid (PFDoA)
Triclosan (2,4,4'-Trichloro-2'-hydroxyphenyl ether)	Perfluoroheptanoic acid (PFHpA)
	Perfluorohexane sulfonic acid (PFHxS)
	Perfluorononanoic acid (PFNA)
	Perfluoroctanoic acid (PFOA)
	Perfluoroctane sulfonic acid (PFOS)
	Perfluoroctane sulfonamide (PFOSA)
	2-(N-Ethyl-perfluoroctane sulfonamido) acetic acid (Et-PFOSA-AcOH)
	2-(N-Methyl-perfluoroctane sulfonamido) acetic acid (Me-PFOSA-AcOH)
	Perfluoroundecanoic acid (PFUA)
Metals	Phthalates
Antimony	Mono-benzyl phthalate (MBzP)
Arsenic, Total	Mono-isobutyl phthalate (MIBP)
Arsenic (V) acid	Mono-n-butyl phthalate (MnBP)
Arsenobetaine	Mono-cyclohexyl phthalate (MCHP)
Arsenocholine	Mono-ethyl phthalate (MEP)
Arsenos (III) acid	Mono-2-ethylhexyl phthalate (MEHP)
Dimethylarsinic acid	Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)
Monomethylarsonic acid	Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)
Trimethylarsine oxide	Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)
Barium	Mono-(carboxynonyl) phthalate (MCNP) *
Beryllium	Mono-isomyristyl phthalate (MINP)
Cadmium	Mono-(carboxyoctyl) phthalate (MCOP) *
Cesium	Mono-methyl phthalate (MMP)
Cobalt	Mono-(3-carboxypropyl) phthalate (MCPP)
Lead	Mono-n-octyl phthalate (MOP)
Mercury	
Molybdenum	
Platinum	
Thallium	
Tungsten	
Uranium	
Parabens	
Butyl paraben *	
Ethyl paraben *	
Methyl paraben *	
<i>n</i> -Propyl paraben *	

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Serum Cotinine

Metabolite of nicotine (component of tobacco smoke)

Geometric mean and selected percentiles of serum concentrations (in ng/mL) for the **non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	.060 (<LOD-.080)	.240 (.190-.302)	1.02 (.770-1.28)	1.96 (1.60-2.62)	5999
	01-02**	.062 (.050-.077)	< LOD	.160 (.120-.220)	.930 (.740-1.17)	2.20 (1.83-2.44)	6819
	03-04	.071 (.057-.089)	.050 (.040-.070)	.210 (.140-.310)	.990 (.740-1.30)	2.17 (1.81-2.54)	6320
	05-06	.054 (.047-.061)	.040 (.030-.040)	.120 (.100-.150)	.630 (.460-.870)	1.47 (1.15-1.92)	6347
Age group							
3-11 years	99-00	.164 (.115-.234)	.110 (.066-.188)	.500 (.260-1.16)	1.88 (.997-3.44)	3.44 (1.42-4.79)	1174
	01-02**	.110 (.076-.160)	.070 (<LOD-.130)	.570 (.310-1.00)	2.23 (1.63-2.78)	3.23 (2.53-4.01)	1415
	03-04	.137 (.088-.213)	.120 (.060-.220)	.620 (.310-1.20)	2.04 (1.38-2.94)	3.35 (2.12-4.68)	1252
	05-06	.078 (.062-.097)	.050 (.040-.070)	.220 (.160-.350)	1.22 (.880-1.82)	2.42 (1.63-3.46)	1296
12-19 years	99-00	.163 (.142-.187)	.110 (.080-.163)	.540 (.428-.660)	1.66 (1.50-1.95)	2.62 (2.09-3.39)	1773
	01-02**	.086 (.059-.126)	.050 (<LOD-.110)	.350 (.190-.580)	1.53 (1.09-2.12)	3.12 (2.47-3.99)	1902
	03-04	.110 (.087-.139)	.080 (.060-.120)	.510 (.350-.670)	1.55 (1.21-1.93)	2.68 (1.96-4.02)	1783
	05-06	.074 (.060-.092)	.050 (.040-.060)	.230 (.150-.350)	1.16 (.860-1.69)	2.26 (1.69-2.72)	1714
20 years and older	99-00	*	.050 (<LOD-.061)	.167 (.140-.193)	.630 (.533-820)	1.50 (1.28-1.66)	3052
	01-02**	.052 (<LOD-.063)	< LOD	.110 (.090-.150)	.630 (.470-790)	1.42 (1.14-1.89)	3502
	03-04	.058 (.047-.071)	.040 (.030-.050)	.140 (.100-.200)	.630 (.480-840)	1.54 (1.26-1.92)	3285
	05-06	.047 (.042-.053)	.030 (.030-.040)	.100 (.080-.120)	.440 (.310-620)	1.14 (.870-1.41)	3337
Gender							
Males	99-00	.124 (.106-.145)	.080 (.060-.110)	.308 (.220-.410)	1.20 (.950-1.49)	2.39 (1.66-3.22)	2789
	01-02**	.075 (.059-.094)	.050 (<LOD-.070)	.230 (.160-.320)	1.17 (.960-1.49)	2.44 (2.23-2.99)	3152
	03-04	.087 (.070-.108)	.060 (.040-.080)	.280 (.190-.360)	1.23 (.910-1.68)	2.63 (2.09-3.19)	2937
	05-06	.064 (.055-.074)	.040 (.040-.050)	.150 (.120-.190)	.720 (.550-1.07)	1.85 (1.42-2.24)	2922
Females	99-00	*	< LOD	.180 (.148-.230)	.850 (.600-1.14)	1.85 (1.33-2.45)	3210
	01-02**	.053 (<LOD-.066)	< LOD	.120 (.090-.180)	.710 (.540-990)	1.77 (1.32-2.20)	3667
	03-04	.060 (.047-.077)	.040 (.030-.060)	.160 (.110-.260)	.860 (.580-1.15)	1.76 (1.32-2.22)	3383
	05-06	.047 (.040-.054)	.030 (.030-.040)	.100 (.070-.130)	.510 (.300-830)	1.23 (1.04-1.52)	3425
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	.140 (.110-.180)	.506 (.370-726)	1.21 (.900-1.70)	2241
	01-02**	.060 (<LOD-.084)	< LOD	.160 (.080-.310)	.730 (.480-1.19)	2.12 (1.19-2.96)	1878
	03-04	.054 (.043-.068)	.030 (.020-.050)	.120 (.080-.180)	.690 (.430-1.00)	2.65 (1.87-3.57)	1707
	05-06	.047 (.038-.059)	.030 (.020-.040)	.100 (.070-.150)	.500 (.370-730)	1.54 (.830-2.49)	1807
Non-Hispanic blacks	99-00	.175 (.153-.201)	.131 (.111-.150)	.505 (.400-.625)	1.43 (1.21-1.75)	2.34 (1.84-3.50)	1333
	01-02**	.164 (.137-.197)	.130 (.110-.160)	.580 (.450-.770)	1.77 (1.55-2.05)	3.15 (2.50-4.30)	1602
	03-04	.144 (.104-.198)	.120 (.080-.180)	.520 (.350-.770)	1.54 (1.20-2.14)	2.77 (2.18-3.54)	1704
	05-06	.114 (.085-.153)	.080 (.060-.120)	.440 (.240-.690)	1.42 (.900-2.03)	2.45 (1.70-3.70)	1630
Non-Hispanic whites	99-00	*	.050 (<LOD-.073)	.216 (.154-.312)	.950 (.621-1.40)	1.92 (1.48-3.02)	1950
	01-02**	.052 (<LOD-.068)	< LOD	.120 (.090-.180)	.800 (.570-1.11)	1.88 (1.48-2.30)	2847
	03-04	.066 (.050-.087)	.040 (.030-.070)	.180 (.120-.300)	.920 (.620-1.32)	2.01 (1.70-2.49)	2500
	05-06	.049 (.042-.056)	.030 (.030-.040)	.100 (.080-.130)	.530 (.330-800)	1.27 (.980-1.62)	2404

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.05, 0.05, 0.015, and 0.02 respectively.

** In the 2001-2002 survey period, 83% of measurements had an LOD of 0.015 ng/mL, and 17% had an LOD of 0.05 ng/mL.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Benzophenone-3 (2-Hydroxy-4-methoxybenzophenone)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric	Selected percentiles (95% confidence interval)				Sample size
		mean (95% conf. interval)	50th	75th	90th	95th	
Total	03-04	22.9 (18.1-28.9)	18.1 (15.5-23.2)	94.0 (67.5-123)	370 (225-570)	1040 (698-1390)	2517
	05-06	19.4 (16.5-22.8)	14.1 (12.5-17.5)	68.8 (54.5-87.2)	433 (294-597)	1150 (936-1510)	2548
Age group							
6-11 years	03-04	21.2 (16.4-27.3)	17.2 (14.9-25.9)	66.7 (38.7-102)	158 (106-246)	246 (154-618)	314
	05-06	21.2 (14.3-31.3)	19.4 (11.7-26.1)	58.8 (40.5-102)	259 (115-433)	852 (355-2200)	356
12-19 years	03-04	22.9 (18.0-29.3)	20.1 (16.1-25.1)	67.1 (45.2-93.8)	170 (137-240)	407 (183-717)	715
	05-06	21.2 (15.8-28.4)	14.9 (12.1-21.4)	64.3 (39.7-95.3)	227 (130-382)	633 (252-1260)	702
20 years and older	03-04	23.1 (18.0-29.6)	18.1 (14.7-23.3)	109 (72.1-140)	450 (315-733)	1220 (769-1750)	1488
	05-06	19.0 (16.5-21.8)	13.5 (12.0-16.3)	70.9 (55.2-87.2)	543 (390-638)	1200 (954-1690)	1490
Gender							
Males	03-04	16.8 (13.2-21.3)	13.7 (11.4-16.8)	55.3 (33.2-86.6)	178 (134-324)	567 (238-1350)	1229
	05-06	14.6 (10.8-19.7)	11.8 (8.80-15.9)	43.4 (31.0-68.8)	227 (103-552)	909 (479-1190)	1270
Females	03-04	30.7 (23.7-39.8)	26.0 (20.2-34.1)	137 (106-172)	596 (403-769)	1340 (776-1790)	1288
	05-06	25.5 (21.7-29.9)	17.9 (14.3-23.1)	129 (82.9-166)	638 (478-900)	1410 (945-2620)	1278
Race/ethnicity							
Mexican Americans	03-04	16.5 (10.9-25.1)	11.9 (8.50-18.3)	45.5 (25.9-78.2)	178 (76.4-412)	412 (178-2180)	613
	05-06	14.3 (10.7-19.1)	10.2 (7.40-14.1)	45.6 (24.1-75.7)	214 (166-313)	635 (337-1090)	637
Non-Hispanic blacks	03-04	12.8 (9.38-17.4)	10.2 (7.40-14.4)	34.3 (22.8-50.6)	127 (90.8-176)	247 (143-499)	652
	05-06	12.4 (9.77-15.6)	9.40 (7.30-11.8)	33.0 (22.3-46.5)	208 (115-291)	556 (269-1060)	678
Non-Hispanic whites	03-04	27.7 (20.3-37.8)	24.4 (16.8-32.0)	121 (83.6-162)	507 (316-769)	1340 (733-2070)	1092
	05-06	21.6 (18.5-25.2)	16.0 (13.5-19.0)	82.4 (64.2-114)	552 (392-754)	1370 (945-2050)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.3 and 0.4.

Urinary Benzophenone-3 (2-Hydroxy-4-methoxybenzophenone) (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	22.2 (17.6-28.0)	16.2 (12.7-21.6)	82.0 (58.7-108)	415 (283-577)	1080 (686-1600)	2514
	05-06	18.9 (15.8-22.6)	13.5 (11.2-16.8)	60.4 (47.6-81.4)	445 (346-553)	1210 (794-1970)	2548
Age group							
6-11 years	03-04	25.8 (19.5-34.1)	22.4 (14.4-33.7)	84.6 (41.0-131)	171 (132-365)	427 (171-710)	314
	05-06	23.3 (15.9-34.1)	17.5 (11.6-28.3)	67.7 (39.7-105)	249 (106-631)	868 (264-2080)	356
12-19 years	03-04	17.2 (13.7-21.5)	12.9 (10.4-16.5)	43.6 (29.5-57.7)	136 (91.7-239)	350 (173-646)	713
	05-06	15.8 (11.6-21.6)	12.1 (9.16-17.0)	42.5 (28.6-58.7)	164 (101-438)	625 (225-956)	702
20 years and older	03-04	22.8 (17.8-29.1)	16.2 (12.7-21.9)	93.2 (66.0-130)	491 (361-700)	1330 (880-1880)	1487
	05-06	19.0 (16.3-22.2)	13.4 (11.2-16.2)	64.2 (49.3-87.0)	509 (406-628)	1480 (816-2200)	1490
Gender							
Males	03-04	13.6 (10.8-17.1)	10.3 (8.36-12.9)	40.0 (24.9-62.5)	169 (93.3-316)	381 (229-685)	1228
	05-06	11.7 (8.74-15.8)	9.43 (6.72-12.5)	31.9 (19.7-49.4)	176 (77.1-406)	553 (317-948)	1270
Females	03-04	35.5 (27.1-46.4)	28.2 (20.2-37.0)	144 (101-224)	686 (491-1130)	1850 (1220-2580)	1286
	05-06	30.0 (25.3-35.6)	20.9 (17.0-29.0)	129 (88.0-175)	707 (527-912)	1880 (1150-2770)	1278
Race/ethnicity							
Mexican Americans	03-04	15.1 (9.44-24.0)	11.1 (6.95-16.0)	40.7 (18.3-85.8)	158 (87.4-362)	595 (118-1860)	612
	05-06	12.9 (10.2-16.2)	8.63 (6.16-12.5)	32.1 (23.1-51.8)	216 (135-408)	948 (441-1220)	637
Non-Hispanic blacks	03-04	8.78 (6.49-11.9)	6.80 (5.27-9.00)	19.7 (13.5-33.4)	79.8 (46.8-139)	185 (79.8-536)	651
	05-06	8.69 (7.02-10.8)	6.29 (5.52-7.78)	21.2 (14.5-34.5)	118 (74.9-245)	448 (208-876)	678
Non-Hispanic whites	03-04	28.3 (20.6-38.8)	22.0 (14.6-32.7)	116 (73.5-175)	510 (380-760)	1330 (852-2410)	1091
	05-06	22.7 (19.4-26.7)	16.2 (13.0-19.7)	77.3 (56.5-106)	538 (406-679)	1500 (828-2430)	1038

Urinary Bisphenol A (2,2-bis[4-Hydroxyphenyl] propane)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	2.64 (2.38-2.94)	2.80 (2.50-3.10)	5.50 (5.00-6.20)	10.6 (9.40-12.0)	16.0 (14.4-17.2)	2517
	05-06	1.90 (1.79-2.02)	2.00 (1.90-2.00)	3.70 (3.50-3.90)	7.00 (6.40-7.60)	11.5 (10.0-13.6)	2548
Age group							
6-11 years	03-04	3.55 (2.95-4.29)	3.80 (2.70-5.00)	6.90 (6.00-8.30)	12.6 (9.50-15.1)	16.0 (11.5-23.3)	314
	05-06	2.86 (2.52-3.24)	2.70 (2.30-2.90)	5.00 (4.40-5.80)	13.5 (9.30-16.8)	22.8 (13.6-34.6)	356
12-19 years	03-04	3.74 (3.31-4.22)	4.30 (3.60-4.60)	7.80 (6.50-9.00)	13.5 (11.8-15.2)	16.5 (15.2-20.9)	715
	05-06	2.42 (2.18-2.68)	2.40 (2.10-2.70)	4.30 (3.90-5.20)	8.40 (6.50-10.8)	11.9 (10.7-14.8)	702
20 years and older	03-04	2.41 (2.15-2.72)	2.60 (2.30-2.80)	5.10 (4.50-5.70)	9.50 (8.10-11.3)	15.2 (12.4-18.1)	1488
	05-06	1.75 (1.62-1.89)	1.80 (1.70-2.00)	3.40 (3.10-3.70)	6.40 (5.80-7.50)	10.7 (8.80-12.1)	1490
Gender							
Males	03-04	2.92 (2.63-3.24)	3.20 (2.70-3.60)	6.10 (5.40-6.60)	10.4 (9.50-11.6)	16.0 (12.7-17.6)	1229
	05-06	2.09 (1.92-2.28)	2.10 (2.00-2.30)	3.70 (3.40-4.20)	7.70 (6.80-9.30)	12.8 (10.1-15.8)	1270
Females	03-04	2.41 (2.11-2.75)	2.50 (2.20-2.80)	5.00 (4.20-6.20)	10.6 (8.70-12.5)	15.9 (13.5-20.1)	1288
	05-06	1.74 (1.55-1.95)	1.80 (1.60-2.00)	3.70 (3.10-4.00)	6.20 (5.80-7.60)	10.4 (7.70-14.7)	1278
Race/ethnicity							
Mexican Americans	03-04	2.58 (2.15-3.08)	2.60 (2.10-3.20)	5.20 (4.40-6.50)	9.90 (7.30-13.9)	15.4 (10.2-19.7)	613
	05-06	2.05 (1.75-2.40)	2.00 (1.70-2.40)	3.60 (3.00-4.20)	6.90 (5.40-10.1)	12.2 (8.00-15.6)	637
Non-Hispanic blacks	03-04	4.24 (3.73-4.82)	4.30 (3.80-5.10)	8.20 (7.10-9.80)	14.2 (11.7-16.9)	20.6 (14.9-25.2)	652
	05-06	2.50 (2.25-2.77)	2.70 (2.30-3.00)	4.60 (4.00-5.00)	8.00 (6.80-9.30)	11.3 (8.90-14.2)	678
Non-Hispanic whites	03-04	2.51 (2.26-2.79)	2.70 (2.50-3.00)	5.20 (4.70-5.80)	9.60 (8.30-10.9)	15.1 (12.6-16.7)	1092
	05-06	1.76 (1.62-1.91)	1.80 (1.60-2.00)	3.50 (3.20-3.80)	6.80 (5.90-7.60)	11.0 (8.80-13.7)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.4 and 0.4.

Urinary Bisphenol A (2,2-bis[4-Hydroxyphenyl] propane) (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	2.58 (2.36-2.82)	2.50 (2.31-2.80)	4.29 (3.88-4.75)	7.67 (6.62-8.66)	11.2 (9.78-12.4)	2514
	05-06	1.86 (1.79-1.92)	1.71 (1.64-1.79)	3.01 (2.86-3.20)	5.73 (5.29-6.36)	9.70 (8.31-10.9)	2548
Age group							
6-11 years	03-04	4.32 (3.63-5.14)	4.29 (3.63-5.23)	7.14 (5.83-9.56)	12.2 (9.84-14.8)	15.7 (12.2-23.2)	314
	05-06	3.14 (2.79-3.54)	2.80 (2.55-3.06)	5.04 (4.46-5.71)	15.6 (8.15-22.4)	24.6 (19.9-48.5)	356
12-19 years	03-04	2.80 (2.52-3.11)	2.74 (2.35-3.22)	4.74 (4.21-5.09)	7.79 (6.41-8.87)	11.8 (8.05-14.2)	713
	05-06	1.80 (1.67-1.95)	1.65 (1.50-1.76)	2.73 (2.41-2.98)	5.71 (4.07-7.50)	8.52 (6.94-12.2)	702
20 years and older	03-04	2.39 (2.17-2.64)	2.36 (2.15-2.59)	3.93 (3.44-4.33)	6.64 (5.97-7.74)	10.0 (9.01-11.4)	1487
	05-06	1.75 (1.67-1.84)	1.64 (1.56-1.75)	2.84 (2.67-3.08)	5.38 (4.89-5.87)	8.54 (7.58-9.77)	1490
Gender							
Males	03-04	2.38 (2.15-2.63)	2.31 (2.08-2.70)	4.19 (3.81-4.64)	7.10 (6.41-8.28)	9.94 (9.06-11.7)	1228
	05-06	1.68 (1.57-1.80)	1.56 (1.45-1.64)	2.73 (2.43-3.14)	5.27 (4.64-6.04)	8.40 (6.81-11.4)	1270
Females	03-04	2.78 (2.50-3.08)	2.68 (2.40-2.94)	4.41 (3.81-5.15)	7.93 (6.48-10.2)	12.4 (9.29-18.2)	1286
	05-06	2.04 (1.95-2.14)	1.85 (1.76-2.02)	3.21 (2.98-3.39)	6.47 (5.51-7.50)	9.86 (8.62-11.8)	1278
Race/ethnicity							
Mexican Americans	03-04	2.34 (2.02-2.71)	2.38 (2.00-2.65)	3.85 (3.24-4.55)	7.09 (5.00-9.04)	10.9 (8.50-14.3)	612
	05-06	1.84 (1.66-2.04)	1.62 (1.45-1.84)	2.99 (2.56-3.60)	6.00 (4.51-8.00)	10.3 (6.84-14.9)	637
Non-Hispanic blacks	03-04	2.92 (2.58-3.32)	2.95 (2.51-3.27)	4.90 (4.07-6.13)	8.64 (7.53-9.63)	11.9 (10.2-13.3)	651
	05-06	1.76 (1.62-1.90)	1.68 (1.53-1.92)	2.82 (2.67-3.04)	4.56 (3.85-5.43)	6.81 (5.00-9.27)	678
Non-Hispanic whites	03-04	2.58 (2.37-2.81)	2.55 (2.32-2.80)	4.30 (3.93-4.67)	7.58 (6.32-8.87)	11.0 (9.34-12.4)	1091
	05-06	1.85 (1.75-1.96)	1.70 (1.60-1.82)	3.08 (2.78-3.31)	5.80 (5.13-6.72)	9.77 (7.87-11.5)	1038

Urinary 4-*tert*-Octylphenol (4-[1,1,3,3-Tetramethylbutyl] phenol)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	2548
Age group							
6-11 years	05-06	*	< LOD	< LOD	< LOD	.300 (.200-.300)	356
12-19 years	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.400)	702
20 years and older	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	1490
Gender							
Males	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	1270
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	.300 (<LOD-.800)	637
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.400)	678
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	1038

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.2.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**The 2003-2004 data for this chemical have been removed, due to potential for contamination that may have occurred during sampling.

Urinary 4-*tert*-Octylphenol (4-[1,1,3,3-Tetramethylbutyl] phenol) (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	*	< LOD	< LOD	< LOD	.560 (<LOD-.620)	2548
Age group							
6-11 years	05-06	*	< LOD	< LOD	< LOD	.410 (.350-.610)	356
12-19 years	05-06	*	< LOD	< LOD	< LOD	.450 (<LOD-.560)	702
20 years and older	05-06	*	< LOD	< LOD	< LOD	.580 (<LOD-.670)	1490
Gender							
Males	05-06	*	< LOD	< LOD	< LOD	.390 (<LOD-.440)	1270
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	.480 (<LOD-.740)	637
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	.320 (<LOD-.400)	678
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	.610 (<LOD-.670)	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**The 2003-2004 data for this chemical have been removed, due to potential for contamination that may have occurred during sampling.

Urinary Triclosan (2,4,4'-Trichloro-2'-hydroxyphenyl ether)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric	Selected percentiles (95% confidence interval)				Sample size
		mean (95% conf. interval)	50th	75th	90th	95th	
Total	03-04	13.0 (11.6-14.6)	9.20 (7.90-10.9)	47.4 (38.2-58.4)	249 (188-304)	461 (383-522)	2517
	05-06	18.5 (16.1-21.3)	15.1 (11.8-18.5)	76.2 (57.9-97.6)	334 (279-402)	655 (573-739)	2548
Age group							
6-11 years	03-04	8.16 (6.20-10.8)	6.00 (4.00-8.50)	20.7 (14.3-31.6)	123 (36.4-163)	157 (113-380)	314
	05-06	12.8 (9.89-16.7)	10.3 (8.30-17.2)	35.4 (23.9-65.8)	97.6 (67.4-181)	246 (99.5-462)	356
12-19 years	03-04	14.5 (11.0-19.1)	10.3 (8.20-13.1)	39.0 (26.5-86.4)	304 (134-566)	655 (310-890)	715
	05-06	18.8 (14.9-23.8)	15.4 (11.0-21.0)	67.5 (45.3-100)	330 (174-461)	566 (389-707)	702
20 years and older	03-04	13.6 (12.0-15.3)	9.60 (8.20-11.5)	51.7 (39.6-65.7)	261 (198-317)	472 (406-522)	1488
	05-06	19.3 (16.4-22.6)	15.5 (11.8-19.4)	84.3 (61.0-114)	366 (289-462)	738 (583-864)	1490
Gender							
Males	03-04	16.2 (13.4-19.6)	11.7 (9.30-14.8)	84.9 (50.6-111)	317 (231-433)	574 (461-716)	1229
	05-06	21.3 (17.6-25.7)	17.6 (11.9-23.2)	103 (69.9-143)	446 (366-488)	738 (601-873)	1270
Females	03-04	10.6 (9.29-12.1)	7.60 (6.10-9.10)	33.2 (27.1-39.4)	144 (96.5-250)	380 (258-430)	1288
	05-06	16.2 (13.9-18.8)	12.6 (10.1-15.6)	58.7 (41.5-81.9)	226 (169-304)	513 (310-773)	1278
Race/ethnicity							
Mexican Americans	03-04	14.6 (10.6-20.1)	8.80 (5.40-17.5)	65.4 (32.8-127)	357 (225-456)	597 (372-992)	613
	05-06	26.7 (21.2-33.7)	18.7 (13.5-25.5)	196 (99.4-269)	668 (475-759)	866 (750-1180)	637
Non-Hispanic blacks	03-04	14.4 (11.4-18.2)	11.1 (8.70-16.1)	37.6 (30.2-58.0)	203 (87.5-341)	450 (254-750)	652
	05-06	17.3 (13.3-22.4)	14.0 (10.4-19.0)	59.2 (37.7-98.3)	258 (138-460)	541 (273-1190)	678
Non-Hispanic whites	03-04	12.9 (11.2-14.9)	9.20 (7.40-11.0)	49.2 (37.8-63.4)	245 (163-334)	461 (383-527)	1092
	05-06	17.5 (14.9-20.6)	15.1 (10.9-19.0)	74.3 (54.1-90.3)	288 (231-366)	569 (462-693)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 2.3 and 2.3.

Urinary Triclosan (2,4,4'-Trichloro-2'-hydroxyphenyl ether) (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	12.7 (11.5-14.1)	9.48 (8.22-10.4)	43.9 (33.8-60.6)	212 (172-241)	368 (294-463)	2514
	05-06	18.0 (16.0-20.3)	13.0 (11.5-16.1)	73.2 (57.3-91.6)	304 (240-364)	532 (434-674)	2548
Age group							
6-11 years	03-04	9.93 (7.43-13.3)	7.55 (4.72-13.4)	25.1 (15.3-35.6)	116 (39.9-236)	236 (115-336)	314
	05-06	14.1 (10.8-18.5)	13.5 (7.97-18.5)	38.6 (26.0-54.1)	108 (62.4-169)	241 (108-598)	356
12-19 years	03-04	10.9 (8.32-14.2)	7.45 (5.48-10.7)	31.8 (21.9-61.1)	193 (90.7-318)	356 (169-580)	713
	05-06	14.0 (11.0-17.8)	11.1 (8.68-13.6)	51.0 (33.0-73.4)	193 (125-306)	385 (203-739)	702
20 years and older	03-04	13.4 (12.0-15.1)	10.0 (8.89-11.4)	50.0 (36.0-73.8)	224 (186-272)	385 (308-506)	1487
	05-06	19.3 (16.9-22.0)	13.7 (11.6-17.0)	86.1 (64.0-109)	343 (262-411)	581 (440-718)	1490
Gender							
Males	03-04	13.2 (11.3-15.6)	9.21 (6.86-12.1)	73.1 (45.8-85.9)	237 (175-294)	384 (294-506)	1228
	05-06	17.1 (14.1-20.7)	12.4 (10.0-18.5)	82.6 (58.2-109)	308 (232-368)	472 (355-721)	1270
Females	03-04	12.2 (10.6-14.2)	9.54 (8.45-10.4)	32.3 (26.2-46.6)	182 (138-217)	336 (225-480)	1286
	05-06	19.0 (16.1-22.6)	13.8 (11.7-16.7)	64.0 (47.6-89.8)	301 (209-434)	619 (418-898)	1278
Race/ethnicity							
Mexican Americans	03-04	13.3 (9.38-18.8)	9.18 (5.45-13.9)	66.7 (28.8-112)	292 (151-432)	453 (263-1150)	612
	05-06	24.1 (19.3-29.9)	17.6 (13.3-22.8)	154 (96.4-242)	440 (379-601)	736 (601-818)	637
Non-Hispanic blacks	03-04	9.94 (7.92-12.5)	7.74 (5.50-10.0)	30.2 (25.6-37.3)	132 (78.0-213)	260 (127-513)	651
	05-06	12.2 (9.47-15.6)	9.50 (7.64-11.8)	41.0 (23.3-77.4)	179 (106-243)	352 (203-674)	678
Non-Hispanic whites	03-04	13.3 (11.6-15.1)	9.82 (8.11-11.5)	47.0 (34.3-67.7)	213 (160-272)	358 (276-480)	1091
	05-06	18.4 (16.0-21.2)	13.5 (11.6-17.0)	73.4 (56.8-97.0)	282 (231-343)	472 (367-699)	1038

Urinary Antimony

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.132 (.120-.145)	.130 (.120-.150)	.220 (.200-.230)	.330 (.300-.350)	.430 (.390-.470)	2276
	01-02	.134 (.126-.142)	.130 (.130-.140)	.190 (.180-.200)	.270 (.250-.310)	.350 (.320-.400)	2690
	03-04	*	.080 (<LOD-.090)	.130 (.120-.150)	.200 (.190-.220)	.280 (.250-.320)	2558
	05-06	.073 (.066-.081)	.070 (.070-.080)	.120 (.110-.140)	.220 (.180-.250)	.300 (.270-.360)	2576
Age group							
6-11 years	99-00	.176 (.154-.200)	.190 (.160-.210)	.260 (.230-.280)	.350 (.300-.400)	.440 (.320-.600)	316
	01-02	.146 (.134-.160)	.150 (.130-.160)	.200 (.180-.210)	.270 (.240-.330)	.340 (.280-.440)	368
	03-04	.099 (.087-.114)	.100 (.070-.120)	.160 (.120-.200)	.240 (.190-.310)	.310 (.230-.330)	290
	05-06	.075 (.063-.088)	.080 (.060-.090)	.110 (.090-.130)	.190 (.120-.260)	.240 (.170-.340)	355
12-19 years	99-00	.158 (.141-.178)	.170 (.150-.180)	.240 (.210-.270)	.350 (.290-.420)	.460 (.350-.510)	663
	01-02	.169 (.156-.184)	.160 (.150-.180)	.240 (.220-.260)	.350 (.320-.410)	.460 (.400-.500)	762
	03-04	.105 (.095-.115)	.100 (.090-.120)	.150 (.140-.160)	.230 (.200-.270)	.290 (.250-.370)	725
	05-06	.092 (.083-.101)	.090 (.080-.100)	.140 (.130-.160)	.240 (.200-.270)	.280 (.250-.320)	701
20 years and older	99-00	.123 (.112-.137)	.120 (.110-.130)	.200 (.180-.220)	.310 (.290-.350)	.430 (.390-.470)	1297
	01-02	.128 (.119-.136)	.130 (.120-.130)	.180 (.170-.190)	.250 (.220-.300)	.330 (.280-.390)	1560
	03-04	*	.070 (<LOD-.080)	.120 (.100-.140)	.190 (.170-.210)	.270 (.220-.320)	1543
	05-06	.070 (.064-.078)	.070 (.060-.080)	.120 (.110-.140)	.220 (.180-.270)	.320 (.260-.420)	1520
Gender							
Males	99-00	.143 (.131-.157)	.150 (.130-.160)	.240 (.220-.260)	.350 (.330-.390)	.470 (.390-.570)	1132
	01-02	.145 (.136-.154)	.140 (.130-.150)	.200 (.190-.210)	.310 (.280-.330)	.390 (.350-.440)	1335
	03-04	.095 (.088-.103)	.090 (.080-.100)	.140 (.130-.160)	.220 (.200-.250)	.320 (.270-.350)	1281
	05-06	.085 (.076-.095)	.080 (.080-.090)	.140 (.120-.160)	.250 (.210-.290)	.350 (.260-.460)	1271
Females	99-00	.122 (.109-.137)	.120 (.110-.140)	.200 (.180-.220)	.300 (.280-.340)	.400 (.350-.460)	1144
	01-02	.125 (.117-.133)	.120 (.120-.130)	.180 (.160-.190)	.240 (.220-.280)	.320 (.260-.360)	1355
	03-04	*	< LOD	.120 (.090-.140)	.180 (.150-.220)	.230 (.190-.330)	1277
	05-06	.063 (.057-.071)	.060 (.050-.070)	.100 (.090-.120)	.180 (.150-.230)	.270 (.200-.330)	1305
Race/ethnicity							
Mexican Americans	99-00	.132 (.108-.161)	.140 (.120-.170)	.210 (.180-.240)	.300 (.260-.390)	.430 (.330-.560)	787
	01-02	.142 (.130-.154)	.130 (.130-.150)	.200 (.170-.230)	.260 (.240-.320)	.360 (.300-.400)	683
	03-04	.093 (.079-.110)	.090 (<LOD-.120)	.140 (.120-.160)	.190 (.160-.260)	.270 (.210-.330)	618
	05-06	.093 (.082-.105)	.090 (.080-.100)	.150 (.140-.170)	.250 (.210-.340)	.470 (.270-.850)	652
Non-Hispanic blacks	99-00	.175 (.148-.207)	.180 (.150-.200)	.260 (.230-.300)	.400 (.310-.490)	.490 (.410-.710)	554
	01-02	.180 (.164-.197)	.170 (.160-.190)	.250 (.220-.280)	.360 (.320-.410)	.460 (.370-.530)	667
	03-04	.108 (.098-.119)	.110 (.100-.120)	.160 (.150-.190)	.230 (.200-.280)	.310 (.250-.360)	723
	05-06	.088 (.077-.100)	.090 (.080-.100)	.140 (.130-.170)	.210 (.190-.250)	.280 (.240-.320)	692
Non-Hispanic whites	99-00	.128 (.115-.144)	.130 (.110-.140)	.210 (.190-.230)	.330 (.280-.350)	.400 (.360-.500)	768
	01-02	.126 (.117-.135)	.130 (.120-.130)	.180 (.170-.190)	.250 (.230-.300)	.340 (.310-.390)	1132
	03-04	*	.070 (<LOD-.080)	.130 (.110-.140)	.190 (.170-.210)	.280 (.230-.320)	1074
	05-06	.069 (.062-.077)	.070 (.060-.080)	.110 (.100-.130)	.210 (.170-.260)	.300 (.240-.380)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.04, 0.04, 0.07, and 0.032 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Antimony (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.124 (.108-.143)	.119 (.102-.143)	.185 (.164-.214)	.276 (.233-.333)	.385 (.333-.430)	2276
	01-02	.126 (.119-.134)	.120 (.115-.126)	.173 (.162-.188)	.267 (.242-.300)	.364 (.320-.414)	2689
	03-04	*	.080 (<LOD-.086)	.135 (.119-.143)	.208 (.192-.230)	.277 (.250-.294)	2558
	05-06	.072 (.068-.077)	.070 (.060-.070)	.100 (.100-.110)	.160 (.150-.190)	.230 (.190-.290)	2576
Age group							
6-11 years	99-00	.191 (.147-.248)	.185 (.156-.220)	.250 (.200-.417)	.447 (.271-.741)	.741 (.333-.1.30)	316
	01-02	.178 (.159-.200)	.173 (.150-.193)	.228 (.200-.272)	.338 (.265-.480)	.471 (.313-.727)	368
	03-04	.116 (.103-.130)	.118 (.098-.136)	.167 (.146-.187)	.256 (.194-.317)	.333 (.250-.500)	290
	05-06	.092 (.081-.104)	.090 (.080-.110)	.130 (.110-.150)	.180 (.150-.210)	.220 (.180-.270)	355
12-19 years	99-00	.121 (.104-.140)	.120 (.095-.146)	.176 (.146-.207)	.259 (.206-.310)	.310 (.228-.421)	663
	01-02	.121 (.112-.131)	.115 (.106-.127)	.160 (.138-.186)	.224 (.199-.245)	.266 (.244-.310)	762
	03-04	.075 (.068-.082)	.068 (.061-.077)	.100 (.092-.113)	.156 (.126-.173)	.193 (.172-.255)	725
	05-06	.070 (.065-.076)	.070 (.060-.080)	.100 (.090-.110)	.140 (.120-.150)	.170 (.150-.250)	701
20 years and older	99-00	.118 (.104-.135)	.111 (.097-.135)	.175 (.149-.209)	.263 (.227-.320)	.352 (.320-.391)	1297
	01-02	.122 (.115-.129)	.115 (.108-.121)	.167 (.153-.181)	.265 (.241-.300)	.364 (.318-.405)	1559
	03-04	*	.079 (<LOD-.087)	.135 (.116-.145)	.209 (.195-.233)	.278 (.250-.294)	1543
	05-06	.070 (.066-.075)	.060 (.060-.070)	.100 (.090-.110)	.170 (.150-.190)	.250 (.190-.300)	1520
Gender							
Males	99-00	.112 (.099-.127)	.109 (.095-.127)	.164 (.146-.181)	.226 (.204-.268)	.320 (.235-.391)	1132
	01-02	.114 (.107-.123)	.108 (.103-.115)	.153 (.138-.171)	.228 (.205-.250)	.333 (.281-.438)	1334
	03-04	.080 (.076-.084)	.075 (.069-.081)	.122 (.111-.132)	.192 (.173-.209)	.253 (.230-.278)	1281
	05-06	.070 (.064-.077)	.060 (.060-.070)	.100 (.090-.120)	.160 (.130-.220)	.250 (.170-.310)	1271
Females	99-00	.137 (.117-.161)	.131 (.108-.164)	.213 (.176-.247)	.320 (.263-.417)	.429 (.357-.485)	1144
	01-02	.139 (.131-.148)	.132 (.124-.140)	.196 (.178-.211)	.295 (.267-.317)	.371 (.333-.444)	1355
	03-04	*	< LOD	.143 (.125-.161)	.225 (.188-.261)	.288 (.250-.333)	1277
	05-06	.074 (.070-.078)	.070 (.070-.070)	.110 (.100-.110)	.170 (.150-.190)	.220 (.180-.300)	1305
Race/ethnicity							
Mexican Americans	99-00	.120 (.107-.135)	.114 (.105-.129)	.167 (.148-.203)	.250 (.209-.315)	.333 (.280-.357)	787
	01-02	.138 (.128-.149)	.130 (.117-.143)	.182 (.159-.203)	.269 (.229-.308)	.338 (.308-.429)	682
	03-04	.086 (.076-.098)	.082 (<LOD-.092)	.129 (.107-.151)	.189 (.154-.238)	.238 (.185-.321)	618
	05-06	.087 (.076-.099)	.080 (.070-.080)	.120 (.110-.130)	.190 (.150-.310)	.370 (.200-.800)	652
Non-Hispanic blacks	99-00	.114 (.099-.133)	.112 (.098-.130)	.163 (.144-.183)	.236 (.195-.338)	.343 (.255-.425)	554
	01-02	.123 (.113-.134)	.115 (.106-.127)	.163 (.150-.181)	.233 (.208-.267)	.300 (.248-.373)	667
	03-04	.078 (.071-.085)	.074 (.069-.082)	.109 (.096-.124)	.170 (.148-.192)	.222 (.179-.257)	723
	05-06	.064 (.058-.071)	.060 (.050-.070)	.090 (.080-.090)	.130 (.120-.150)	.190 (.150-.220)	692
Non-Hispanic whites	99-00	.129 (.109-.152)	.125 (.102-.152)	.195 (.167-.225)	.298 (.239-.352)	.400 (.333-.444)	768
	01-02	.127 (.117-.138)	.120 (.113-.130)	.176 (.159-.198)	.280 (.241-.317)	.380 (.318-.471)	1132
	03-04	*	.081 (<LOD-.089)	.139 (.124-.147)	.217 (.200-.238)	.286 (.253-.333)	1074
	05-06	.072 (.068-.077)	.070 (.060-.070)	.110 (.100-.110)	.170 (.150-.190)	.230 (.190-.280)	1041

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Total Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric	Selected percentiles				Sample size
		mean (95% conf. interval)	50th	75th	90th	95th	
Total	03-04	8.30 (7.19-9.57)	7.70 (6.90-8.90)	16.0 (14.1-18.7)	37.4 (31.6-43.5)	65.4 (48.7-83.3)	2557
	05-06	9.29 (8.05-10.7)	8.65 (7.48-9.99)	17.1 (14.9-20.6)	41.1 (33.3-49.7)	66.7 (53.7-87.0)	2576
Age group							
6-11 years	03-04	7.08 (5.66-8.84)	6.80 (5.90-7.70)	10.9 (8.90-14.2)	24.6 (13.8-61.8)	46.9 (17.5-178)	290
	05-06	7.19 (5.81-8.90)	6.96 (5.32-8.88)	11.5 (9.19-16.0)	19.6 (13.1-51.5)	34.1 (19.6-58.5)	355
12-19 years	03-04	8.55 (7.34-9.97)	8.10 (6.80-9.40)	15.2 (12.2-17.8)	30.5 (23.1-40.4)	46.1 (32.9-62.5)	725
	05-06	8.19 (6.87-9.77)	7.92 (6.37-9.50)	14.0 (11.6-18.1)	28.2 (22.9-32.9)	41.9 (32.7-48.0)	701
20 years and older	03-04	8.41 (7.25-9.77)	7.90 (7.00-9.10)	17.0 (15.0-19.7)	40.5 (34.9-46.2)	66.2 (51.2-93.1)	1542
	05-06	9.76 (8.43-11.3)	9.12 (7.85-10.4)	18.9 (15.8-22.9)	44.2 (35.2-56.1)	71.4 (57.7-98.3)	1520
Gender							
Males	03-04	9.50 (8.34-10.8)	8.90 (7.70-9.80)	17.6 (15.2-20.1)	41.6 (32.5-52.8)	65.8 (48.7-95.4)	1281
	05-06	10.1 (8.61-11.8)	8.95 (8.05-10.0)	18.3 (15.5-22.9)	40.8 (31.0-52.6)	63.7 (46.4-78.7)	1271
Females	03-04	7.30 (6.02-8.84)	6.90 (5.90-8.30)	15.0 (11.3-19.5)	33.4 (26.5-41.7)	60.5 (40.8-77.1)	1276
	05-06	8.60 (7.38-10.0)	8.18 (6.64-9.97)	15.9 (13.7-19.9)	41.5 (32.2-53.7)	72.6 (54.8-122)	1305
Race/ethnicity							
Mexican Americans	03-04	9.29 (8.12-10.6)	9.20 (8.10-10.3)	16.2 (13.5-19.9)	34.4 (24.0-60.5)	68.2 (41.3-111)	618
	05-06	9.55 (8.54-10.7)	9.11 (7.99-10.3)	15.6 (14.0-17.1)	29.2 (21.4-56.8)	67.6 (41.7-81.4)	652
Non-Hispanic blacks	03-04	11.6 (9.50-14.1)	10.4 (7.90-11.8)	21.5 (14.9-34.4)	43.5 (36.2-61.8)	78.0 (43.6-141)	722
	05-06	11.0 (8.60-14.0)	9.55 (6.99-13.3)	21.9 (14.9-28.9)	44.9 (31.1-71.4)	82.3 (49.2-164)	692
Non-Hispanic whites	03-04	7.12 (6.13-8.27)	7.00 (6.10-7.90)	13.7 (11.3-15.8)	29.0 (22.6-35.9)	53.1 (38.4-65.6)	1074
	05-06	8.66 (7.20-10.4)	8.05 (6.52-9.66)	16.3 (13.4-20.6)	40.8 (29.4-50.2)	58.5 (46.0-88.0)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.74 and 0.74.

Urinary Total Arsenic (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric	Selected percentiles (95% confidence interval)				Sample size
		mean (95% conf. interval)	50th	75th	90th	95th	
Total	03-04	8.24 (7.07-9.59)	7.04 (5.93-8.51)	14.1 (11.6-17.2)	30.4 (26.0-38.7)	50.4 (40.3-64.5)	2557
	05-06	9.15 (7.93-10.6)	7.70 (6.55-8.98)	15.2 (11.7-19.4)	35.1 (26.5-44.7)	62.8 (44.7-85.0)	2576
Age group							
6-11 years	03-04	8.25 (6.58-10.3)	7.18 (5.93-9.45)	11.7 (9.10-16.3)	22.2 (12.0-69.5)	40.1 (14.7-188)	290
	05-06	8.88 (7.05-11.2)	7.87 (6.19-9.42)	11.8 (9.32-18.9)	24.5 (13.0-62.8)	45.4 (22.9-80.9)	355
12-19 years	03-04	6.11 (5.23-7.13)	5.06 (4.47-6.04)	9.66 (7.44-11.2)	17.8 (12.0-26.0)	27.8 (20.7-35.9)	725
	05-06	6.30 (5.56-7.14)	5.19 (4.80-6.19)	9.62 (8.12-11.1)	19.4 (13.9-25.8)	28.0 (21.9-33.2)	701
20 years and older	03-04	8.64 (7.38-10.1)	7.47 (6.20-9.01)	15.4 (12.7-18.8)	33.8 (27.3-41.2)	53.9 (45.4-64.5)	1542
	05-06	9.75 (8.46-11.2)	8.22 (6.98-9.75)	17.0 (12.8-21.3)	41.0 (29.6-52.5)	68.4 (52.8-89.7)	1520
Gender							
Males	03-04	8.00 (6.81-9.40)	6.75 (5.66-8.35)	13.7 (11.0-18.0)	28.7 (25.1-36.4)	45.6 (35.3-62.1)	1281
	05-06	8.26 (7.09-9.63)	7.16 (5.87-8.54)	12.9 (10.2-18.0)	28.8 (22.9-36.3)	46.1 (35.1-66.5)	1271
Females	03-04	8.47 (7.12-10.1)	7.33 (6.10-8.75)	14.4 (11.7-17.7)	32.3 (24.2-46.6)	58.4 (42.8-75.0)	1276
	05-06	10.1 (8.72-11.7)	8.29 (7.23-9.87)	17.4 (13.0-21.4)	43.8 (29.2-61.5)	74.1 (55.0-96.2)	1305
Race/ethnicity							
Mexican Americans	03-04	8.61 (7.33-10.1)	7.76 (6.30-9.44)	12.6 (10.2-15.9)	24.0 (17.7-34.8)	42.4 (24.8-62.4)	618
	05-06	8.98 (7.89-10.2)	7.48 (6.72-8.87)	12.8 (11.0-16.3)	28.1 (21.1-35.5)	49.1 (31.0-108)	652
Non-Hispanic blacks	03-04	8.31 (6.99-9.88)	6.88 (5.66-8.41)	13.8 (11.5-17.0)	27.6 (17.9-56.0)	54.3 (27.5-120)	722
	05-06	7.96 (6.40-9.92)	6.48 (5.21-8.30)	13.4 (10.0-18.6)	32.5 (18.7-66.5)	71.4 (35.6-98.8)	692
Non-Hispanic whites	03-04	7.50 (6.25-9.01)	6.32 (5.28-7.96)	12.5 (9.86-17.1)	26.8 (21.8-32.0)	40.0 (31.3-53.9)	1074
	05-06	9.01 (7.57-10.7)	7.68 (6.18-9.56)	14.3 (11.1-20.8)	31.9 (24.1-46.1)	59.4 (37.9-96.2)	1041

Urinary Arsenic (V) Acid

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.50)	2568
	05-06	*	< LOD	< LOD	< LOD	1.06 (<LOD-1.43)	2588
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.30)	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
12-19 years	03-04	*	< LOD	< LOD	< LOD	1.20 (<LOD-1.60)	728
	05-06	*	< LOD	< LOD	< LOD	1.00 (<LOD-1.30)	703
20 years and older	03-04	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.50)	1548
	05-06	*	< LOD	< LOD	< LOD	1.09 (<LOD-1.71)	1531
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	1.20 (<LOD-1.50)	1284
	05-06	*	< LOD	< LOD	< LOD	1.14 (<LOD-1.71)	1276
Females	03-04	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.30)	1284
	05-06	*	< LOD	< LOD	< LOD	1.01 (<LOD-1.22)	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	1.20 (<LOD-1.60)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	1.20 (<LOD-1.80)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.50)	1078
	05-06	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.74)	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 1.0 and 1.0.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenic (V) acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	3.04 (<LOD-3.50)	2568
	05-06	*	< LOD	< LOD	< LOD	3.23 (<LOD-3.55)	2588
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	2.80 (<LOD-4.00)	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
12-19 years	03-04	*	< LOD	< LOD	< LOD	1.75 (<LOD-2.41)	728
	05-06	*	< LOD	< LOD	< LOD	1.69 (<LOD-2.73)	703
20 years and older	03-04	*	< LOD	< LOD	< LOD	3.18 (<LOD-3.70)	1548
	05-06	*	< LOD	< LOD	< LOD	3.38 (<LOD-3.94)	1531
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	2.61 (<LOD-3.18)	1284
	05-06	*	< LOD	< LOD	< LOD	2.14 (<LOD-2.73)	1276
Females	03-04	*	< LOD	< LOD	< LOD	3.33 (<LOD-3.89)	1284
	05-06	*	< LOD	< LOD	< LOD	3.55 (<LOD-4.44)	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	2.69 (<LOD-3.50)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	1.75 (<LOD-2.19)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	3.33 (<LOD-3.95)	1078
	05-06	*	< LOD	< LOD	< LOD	3.38 (<LOD-3.80)	1050

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenobetaine

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	1.55 (1.31-1.83)	1.00 (.800-1.40)	5.20 (4.00-6.50)	16.8 (12.7-22.3)	35.0 (27.6-44.6)	2568
	05-06	1.86 (1.43-2.41)	1.53 (.980-2.26)	6.73 (4.80-8.91)	22.6 (16.5-30.3)	40.6 (30.7-59.4)	2588
Age group							
6-11 years	03-04	*	< LOD	1.80 (.800-4.00)	8.80 (3.90-29.9)	29.9 (6.20-190)	292
	05-06	*	< LOD	2.22 (6.20-5.35)	7.14 (2.34-29.9)	18.9 (5.46-45.0)	354
12-19 years	03-04	*	.600 (.400-.800)	3.20 (2.00-4.70)	13.9 (7.20-25.1)	31.8 (17.2-35.8)	728
	05-06	*	.550 (<LOD-1.14)	3.76 (1.95-7.16)	12.4 (9.15-20.4)	25.6 (16.4-32.4)	703
20 years and older	03-04	1.74 (1.48-2.05)	1.30 (1.00-1.60)	6.10 (4.90-7.10)	18.5 (14.0-23.5)	35.5 (26.8-50.5)	1548
	05-06	2.20 (1.71-2.84)	1.89 (1.41-2.64)	8.14 (5.86-10.4)	27.6 (18.7-35.7)	43.9 (36.0-67.9)	1531
Gender							
Males	03-04	1.66 (1.43-1.93)	1.20 (.900-1.50)	5.80 (4.40-7.10)	18.6 (13.9-23.7)	35.0 (26.8-40.5)	1284
	05-06	1.83 (1.40-2.40)	1.44 (.920-2.04)	6.63 (5.06-8.66)	23.2 (12.8-33.4)	37.1 (28.5-51.3)	1276
Females	03-04	1.45 (1.17-1.80)	.900 (.700-1.40)	4.70 (3.40-6.20)	15.6 (11.1-25.3)	32.7 (21.1-51.3)	1284
	05-06	1.88 (1.42-2.50)	1.64 (.950-2.51)	6.81 (4.03-9.88)	21.8 (17.3-30.1)	43.3 (33.8-67.9)	1312
Race/ethnicity							
Mexican Americans	03-04	1.19 (.871-1.62)	.800 (.500-1.30)	3.20 (1.80-5.20)	10.2 (6.70-21.4)	31.4 (16.3-39.1)	621
	05-06	1.44 (1.23-1.69)	1.04 (.770-1.35)	3.90 (3.03-5.06)	16.8 (11.1-32.0)	41.4 (23.4-57.9)	651
Non-Hispanic blacks	03-04	2.29 (1.60-3.28)	2.00 (1.20-3.50)	7.70 (5.00-12.0)	23.7 (13.2-38.7)	45.6 (25.1-94.0)	725
	05-06	2.55 (1.64-3.99)	2.42 (1.15-4.58)	8.74 (6.01-14.4)	23.8 (15.9-48.9)	59.6 (30.5-121)	695
Non-Hispanic whites	03-04	1.37 (1.11-1.68)	.800 (.700-1.20)	4.30 (2.50-6.30)	13.3 (9.70-21.4)	29.3 (21.4-35.5)	1078
	05-06	1.74 (1.27-2.40)	1.41 (.750-2.27)	6.40 (3.93-9.04)	22.4 (14.1-30.1)	38.4 (27.8-66.8)	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.4 and 0.4.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenobetaine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	1.54 (1.30-1.82)	1.16 (.959-1.43)	5.00 (3.62-6.91)	16.2 (12.5-20.3)	29.4 (24.0-36.4)	2568
	05-06	1.82 (1.40-2.37)	1.64 (1.10-2.41)	6.64 (4.48-8.79)	20.3 (14.5-28.1)	37.0 (27.5-58.3)	2588
Age group							
6-11 years	03-04	*	< LOD	2.00 (1.15-4.83)	12.2 (4.13-39.7)	29.6 (6.80-153)	292
	05-06	*	< LOD	2.88 (1.04-6.25)	8.77 (2.88-40.5)	23.6 (6.86-74.8)	354
12-19 years	03-04	*	.531 (.400-.638)	2.14 (1.39-3.51)	9.29 (4.29-14.7)	17.3 (10.4-28.7)	728
	05-06	*	.620 (<LOD-.800)	2.82 (1.58-4.77)	10.5 (7.03-13.7)	15.4 (11.8-22.3)	703
20 years and older	03-04	1.79 (1.51-2.12)	1.47 (1.15-1.88)	5.91 (4.32-7.72)	17.2 (13.4-21.8)	30.1 (26.1-36.4)	1548
	05-06	2.19 (1.70-2.82)	2.13 (1.40-2.83)	7.79 (5.38-10.2)	24.4 (16.6-32.9)	43.1 (30.5-71.4)	1531
Gender							
Males	03-04	1.40 (1.18-1.67)	1.11 (.909-1.28)	4.78 (3.61-6.70)	14.4 (11.1-18.5)	26.5 (18.6-29.9)	1284
	05-06	1.50 (1.15-1.96)	1.25 (.800-1.93)	5.11 (3.41-7.54)	15.3 (11.2-20.8)	30.5 (19.6-44.0)	1276
Females	03-04	1.68 (1.37-2.05)	1.25 (.938-1.67)	5.58 (3.50-7.43)	17.2 (12.3-24.5)	32.9 (25.6-46.3)	1284
	05-06	2.20 (1.65-2.93)	2.04 (1.30-2.92)	7.86 (5.38-10.8)	26.4 (16.6-35.6)	46.2 (30.3-74.3)	1312
Race/ethnicity							
Mexican Americans	03-04	1.10 (.786-1.55)	.877 (.612-1.40)	2.93 (1.78-5.21)	8.88 (5.50-15.4)	19.0 (9.64-29.4)	621
	05-06	1.35 (1.13-1.62)	.970 (.810-1.19)	4.21 (2.79-5.68)	16.6 (10.5-21.3)	36.9 (18.4-69.5)	651
Non-Hispanic blacks	03-04	1.65 (1.19-2.30)	1.53 (.901-2.45)	5.81 (4.25-7.82)	13.6 (9.76-27.9)	32.9 (13.4-82.1)	725
	05-06	1.84 (1.20-2.83)	1.71 (.910-2.95)	6.07 (3.83-9.25)	19.4 (10.4-45.2)	47.5 (25.3-62.0)	695
Non-Hispanic whites	03-04	1.44 (1.15-1.80)	1.05 (.833-1.36)	4.47 (2.73-6.83)	14.3 (10.9-18.6)	26.5 (18.6-32.0)	1078
	05-06	1.81 (1.32-2.47)	1.65 (.970-2.55)	6.65 (3.95-9.34)	19.7 (12.6-30.5)	36.6 (25.1-71.4)	1050

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenocholine

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.6 and 0.6.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenocholine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenous (III) Acid

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
12-19 years	03-04	*	< LOD	< LOD	< LOD	1.40 (<LOD-1.70)	728
	05-06	*	< LOD	< LOD	< LOD	1.20 (<LOD-1.40)	703
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	1.26 (<LOD-1.73)	1276
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	2.00 (<LOD-3.00)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	1.20 (<LOD-1.80)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 1.2 and 1.2.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenous (III) acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
12-19 years	03-04	*	< LOD	< LOD	< LOD	1.95 (<LOD-2.76)	728
	05-06	*	< LOD	< LOD	< LOD	2.02 (<LOD-3.04)	703
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	2.43 (<LOD-3.15)	1276
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	3.08 (<LOD-4.44)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	2.00 (<LOD-2.29)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Dimethylarsinic Acid

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	3.71 (3.33-4.14)	3.90 (3.00-4.00)	6.00 (5.00-7.00)	11.0 (9.20-12.0)	16.0 (13.0-17.8)	2568
	05-06	3.95 (3.59-4.35)	3.90 (3.46-4.31)	6.17 (5.53-7.04)	10.3 (9.00-12.2)	15.0 (12.2-17.8)	2588
Age group							
6-11 years	03-04	3.73 (3.12-4.45)	4.00 (3.00-4.00)	6.00 (5.00-7.00)	9.00 (7.00-12.0)	12.0 (8.00-22.0)	292
	05-06	3.96 (3.49-4.49)	3.94 (3.20-4.71)	5.94 (5.01-7.10)	10.5 (7.10-12.1)	13.0 (10.7-15.3)	354
12-19 years	03-04	3.85 (3.34-4.42)	4.00 (3.00-4.00)	6.00 (5.00-7.10)	9.30 (7.70-12.0)	13.0 (10.0-16.0)	728
	05-06	3.97 (3.46-4.55)	3.97 (3.31-4.64)	5.74 (5.11-7.10)	9.43 (7.63-11.6)	12.0 (10.7-13.9)	703
20 years and older	03-04	3.69 (3.31-4.11)	3.70 (3.00-4.00)	6.00 (5.00-7.00)	11.0 (10.0-12.0)	16.0 (13.0-19.0)	1548
	05-06	3.95 (3.58-4.36)	3.87 (3.46-4.32)	6.30 (5.59-7.28)	10.3 (9.25-13.3)	16.2 (12.5-19.4)	1531
Gender							
Males	03-04	4.12 (3.60-4.71)	4.00 (3.70-4.30)	6.00 (5.60-7.70)	11.0 (9.00-15.0)	17.0 (12.1-22.0)	1284
	05-06	4.17 (3.79-4.59)	4.04 (3.68-4.43)	6.32 (5.41-7.61)	10.5 (8.68-13.3)	14.8 (11.8-19.2)	1276
Females	03-04	3.37 (3.00-3.78)	3.00 (3.00-4.00)	5.50 (4.80-6.20)	10.0 (8.00-11.0)	14.0 (11.0-17.7)	1284
	05-06	3.75 (3.37-4.18)	3.70 (3.28-4.21)	6.03 (5.46-6.99)	9.95 (8.81-12.2)	15.5 (11.6-19.0)	1312
Race/ethnicity							
Mexican Americans	03-04	4.72 (4.27-5.22)	4.80 (4.00-5.00)	7.00 (6.00-9.00)	12.0 (10.0-16.0)	17.0 (12.0-25.0)	621
	05-06	4.43 (4.15-4.72)	4.66 (4.26-5.13)	6.93 (6.38-7.58)	9.51 (8.70-11.1)	13.1 (10.3-15.1)	651
Non-Hispanic blacks	03-04	4.27 (3.71-4.92)	4.00 (3.50-5.00)	7.00 (6.00-8.00)	11.6 (9.00-15.0)	16.0 (14.0-18.7)	725
	05-06	4.28 (3.68-4.98)	4.02 (3.37-4.82)	6.42 (5.31-7.36)	10.9 (8.22-13.1)	15.2 (11.5-27.1)	695
Non-Hispanic whites	03-04	3.27 (2.95-3.62)	3.00 (3.00-3.80)	5.00 (4.60-6.00)	9.00 (7.00-10.0)	12.0 (9.50-15.0)	1078
	05-06	3.69 (3.28-4.15)	3.60 (3.19-4.08)	5.66 (5.10-6.70)	9.62 (8.11-11.8)	13.9 (10.6-17.8)	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 1.7 and 1.7.

Urinary Dimethylarsinic acid (creatinine corrected)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	3.69 (3.24-4.19)	3.37 (2.94-3.91)	5.71 (4.69-6.74)	9.09 (7.61-11.5)	13.0 (10.7-16.0)	2568
	05-06	3.88 (3.57-4.22)	3.66 (3.39-3.93)	5.71 (5.10-6.43)	9.57 (7.95-10.9)	12.3 (10.6-15.0)	2588
Age group							
6-11 years	03-04	4.34 (3.57-5.28)	4.03 (3.20-4.80)	6.32 (4.65-8.33)	10.3 (7.00-13.9)	13.9 (7.86-21.8)	292
	05-06	4.89 (4.22-5.65)	4.31 (3.64-5.69)	6.85 (5.71-7.69)	10.0 (7.54-14.7)	14.7 (10.0-18.8)	354
12-19 years	03-04	2.74 (2.39-3.14)	2.55 (2.27-2.94)	3.77 (3.17-4.44)	5.88 (4.65-6.67)	7.18 (6.16-11.7)	728
	05-06	3.05 (2.78-3.34)	2.92 (2.55-3.29)	4.25 (3.87-4.84)	6.68 (5.49-8.06)	9.08 (7.11-10.6)	703
20 years and older	03-04	3.79 (3.34-4.31)	3.48 (3.00-4.00)	5.95 (4.86-7.05)	9.45 (8.00-12.0)	13.5 (11.1-18.6)	1548
	05-06	3.93 (3.62-4.27)	3.71 (3.42-4.02)	5.82 (5.22-6.47)	9.74 (8.00-11.2)	12.6 (10.9-15.8)	1531
Gender							
Males	03-04	3.48 (2.95-4.10)	3.16 (2.70-3.82)	5.46 (4.17-6.90)	8.59 (6.92-12.0)	12.3 (8.84-18.9)	1284
	05-06	3.43 (3.13-3.75)	3.24 (2.91-3.63)	5.11 (4.25-6.08)	7.90 (6.65-9.77)	11.0 (9.29-13.0)	1276
Females	03-04	3.89 (3.49-4.34)	3.57 (3.13-4.06)	5.78 (4.95-6.67)	9.32 (8.00-11.5)	13.7 (10.6-18.6)	1284
	05-06	4.37 (4.03-4.75)	4.03 (3.72-4.51)	6.26 (5.71-6.84)	10.0 (8.50-12.6)	14.4 (11.2-19.3)	1312
Race/ethnicity							
Mexican Americans	03-04	4.38 (3.80-5.05)	4.11 (3.29-4.90)	6.25 (4.84-8.15)	10.3 (8.00-11.8)	12.9 (11.1-15.2)	621
	05-06	4.16 (3.83-4.52)	4.00 (3.65-4.36)	5.94 (5.40-6.49)	8.69 (7.23-9.65)	10.2 (9.52-13.2)	651
Non-Hispanic blacks	03-04	3.08 (2.69-3.52)	2.86 (2.60-3.24)	4.34 (3.82-5.05)	7.81 (5.82-9.45)	10.4 (7.61-16.9)	725
	05-06	3.08 (2.70-3.52)	2.91 (2.52-3.32)	4.21 (3.75-4.91)	7.33 (5.40-10.7)	11.6 (7.66-17.9)	695
Non-Hispanic whites	03-04	3.44 (2.97-3.98)	3.17 (2.80-3.73)	5.16 (4.03-6.49)	8.00 (6.32-10.9)	11.1 (8.00-15.4)	1078
	05-06	3.82 (3.47-4.21)	3.64 (3.30-3.93)	5.71 (4.90-6.51)	9.23 (7.26-10.6)	11.6 (9.93-13.9)	1050

Urinary Monomethylarsonic Acid

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	1.20 (1.00-1.30)	1.90 (1.60-2.10)	2.40 (2.00-2.80)	2567
	05-06	*	< LOD	1.19 (1.05-1.34)	1.72 (1.51-1.94)	2.12 (1.79-2.70)	2588
Age group							
6-11 years	03-04	*	< LOD	1.00 (<LOD-1.40)	1.80 (1.30-2.60)	2.30 (1.70-2.90)	292
	05-06	*	< LOD	1.03 (<LOD-1.37)	1.54 (1.37-2.12)	2.12 (1.51-2.73)	354
12-19 years	03-04	*	< LOD	1.50 (1.10-1.80)	2.20 (1.70-3.00)	2.90 (2.20-3.60)	728
	05-06	*	< LOD	1.31 (1.09-1.46)	1.99 (1.62-2.23)	2.41 (2.04-2.89)	703
20 years and older	03-04	*	< LOD	1.20 (1.00-1.30)	1.80 (1.50-2.10)	2.30 (2.00-2.60)	1547
	05-06	*	< LOD	1.20 (1.05-1.33)	1.70 (1.48-1.90)	2.06 (1.74-2.75)	1531
Gender							
Males	03-04	*	< LOD	1.30 (1.10-1.60)	2.00 (1.80-2.40)	2.60 (2.10-3.00)	1283
	05-06	*	< LOD	1.31 (1.12-1.49)	1.79 (1.57-2.09)	2.23 (1.85-2.86)	1276
Females	03-04	*	< LOD	1.00 (<LOD-1.20)	1.60 (1.30-1.90)	2.10 (1.70-2.60)	1284
	05-06	*	< LOD	1.08 (.920-1.24)	1.57 (1.36-1.90)	2.04 (1.67-2.50)	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	1.50 (1.20-1.90)	2.20 (1.70-2.80)	2.80 (2.00-4.40)	621
	05-06	*	< LOD	1.19 (1.10-1.32)	1.73 (1.51-1.97)	2.04 (1.67-2.51)	651
Non-Hispanic blacks	03-04	*	< LOD	1.10 (<LOD-1.30)	1.80 (1.40-2.00)	2.20 (1.70-2.70)	725
	05-06	*	< LOD	1.02 (.950-1.07)	1.35 (1.29-1.44)	1.70 (1.50-1.88)	695
Non-Hispanic whites	03-04	*	< LOD	1.10 (.900-1.30)	1.80 (1.40-2.00)	2.10 (1.80-2.50)	1077
	05-06	*	< LOD	1.22 (1.02-1.39)	1.75 (1.42-2.12)	2.14 (1.72-2.93)	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.9 and 0.9.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Monomethylarsonic acid (creatinine corrected)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	1.33 (1.18-1.54)	2.22 (1.82-2.57)	2.86 (2.40-3.53)	2567
	05-06	*	< LOD	1.28 (1.14-1.52)	2.37 (1.94-2.78)	3.13 (2.67-3.76)	2588
Age group							
6-11 years	03-04	*	< LOD	1.63 (<LOD-1.81)	2.31 (1.88-2.50)	2.52 (2.31-3.07)	292
	05-06	*	< LOD	1.44 (<LOD-1.83)	2.37 (1.65-3.20)	3.13 (2.29-4.92)	354
12-19 years	03-04	*	< LOD	1.10 (.853-1.23)	1.53 (1.30-1.85)	2.07 (1.71-2.22)	728
	05-06	*	< LOD	1.05 (.930-1.14)	1.56 (1.49-1.73)	1.97 (1.78-2.13)	703
20 years and older	03-04	*	< LOD	1.36 (1.18-1.58)	2.28 (1.82-2.79)	3.00 (2.43-3.53)	1547
	05-06	*	< LOD	1.31 (1.13-1.58)	2.46 (2.00-2.91)	3.20 (2.78-3.81)	1531
Gender							
Males	03-04	*	< LOD	1.20 (1.05-1.36)	1.88 (1.53-2.34)	2.50 (2.07-3.45)	1283
	05-06	*	< LOD	1.11 (.950-1.28)	1.78 (1.47-2.29)	2.46 (1.88-3.32)	1276
Females	03-04	*	< LOD	1.50 (<LOD-1.77)	2.40 (1.96-2.86)	3.00 (2.61-3.53)	1284
	05-06	*	< LOD	1.58 (1.36-1.76)	2.78 (2.29-3.20)	3.56 (3.05-4.35)	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	1.46 (1.11-1.93)	2.30 (1.84-3.00)	3.16 (2.40-3.85)	621
	05-06	*	< LOD	1.19 (1.08-1.35)	1.92 (1.60-2.13)	2.53 (2.06-2.91)	651
Non-Hispanic blacks	03-04	*	< LOD	.816 (<LOD-.985)	1.37 (1.14-1.61)	1.88 (1.46-2.17)	725
	05-06	*	< LOD	.790 (.720-.880)	1.11 (.980-1.34)	1.57 (1.23-1.98)	695
Non-Hispanic whites	03-04	*	< LOD	1.33 (1.15-1.62)	2.28 (1.73-2.86)	2.86 (2.35-3.75)	1077
	05-06	*	< LOD	1.35 (1.16-1.64)	2.50 (2.00-3.05)	3.20 (2.78-3.81)	1050

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Trimethylarsine oxide

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 1.0 and 1.0.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Trimethylarsine oxide (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Barium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric	Selected percentiles (95% confidence interval)				Sample size
		mean (95% conf. interval)	50th	75th	90th	95th	
Total	99-00	1.50 (1.35-1.66)	1.60 (1.50-1.90)	3.10 (2.70-3.40)	5.40 (4.60-6.10)	6.90 (6.20-8.40)	2180
	01-02	1.52 (1.41-1.65)	1.63 (1.50-1.76)	3.12 (2.77-3.51)	5.24 (4.73-5.84)	7.48 (6.54-8.12)	2690
	03-04	1.49 (1.36-1.64)	1.51 (1.35-1.72)	2.91 (2.64-3.28)	5.36 (4.86-5.71)	7.54 (6.93-8.63)	2558
	05-06	1.52 (1.39-1.66)	1.58 (1.44-1.70)	2.99 (2.63-3.41)	5.34 (4.82-5.83)	7.10 (6.46-8.18)	2576
Age group							
6-11 years	99-00	2.15 (1.70-2.72)	2.20 (1.90-2.50)	4.00 (2.60-6.10)	6.40 (5.20-8.30)	8.30 (5.00-76.2)	297
	01-02	1.80 (1.44-2.26)	2.09 (1.74-2.49)	3.63 (2.86-4.39)	5.37 (4.26-7.38)	6.88 (5.37-8.49)	368
	03-04	2.21 (1.81-2.71)	2.50 (1.81-2.75)	4.76 (3.80-5.65)	8.63 (5.59-11.8)	11.8 (6.87-14.8)	290
	05-06	1.73 (1.53-1.97)	1.87 (1.61-2.03)	3.55 (2.41-4.30)	6.21 (4.30-7.32)	7.72 (6.26-8.92)	355
12-19 years	99-00	1.97 (1.78-2.19)	2.00 (1.70-2.30)	3.50 (3.10-4.00)	5.90 (4.80-7.00)	9.70 (5.90-13.1)	621
	01-02	2.03 (1.76-2.34)	2.27 (1.96-2.53)	4.11 (3.48-4.72)	6.73 (5.55-7.87)	9.02 (7.25-11.4)	762
	03-04	2.16 (1.93-2.41)	2.35 (2.06-2.63)	4.11 (3.48-4.71)	7.18 (6.00-8.29)	9.63 (8.15-11.4)	725
	05-06	2.16 (1.92-2.42)	2.33 (1.99-2.56)	3.80 (3.60-4.21)	6.35 (5.48-7.49)	8.24 (6.06-10.5)	701
20 years and older	99-00	1.36 (1.24-1.51)	1.50 (1.30-1.70)	2.80 (2.60-3.20)	5.10 (4.30-5.50)	6.40 (5.70-8.40)	1262
	01-02	1.43 (1.32-1.54)	1.50 (1.39-1.65)	2.85 (2.55-3.27)	4.86 (4.53-5.47)	7.14 (6.08-8.12)	1560
	03-04	1.34 (1.20-1.50)	1.39 (1.19-1.56)	2.54 (2.21-2.91)	4.61 (3.99-5.30)	6.61 (5.57-7.43)	1543
	05-06	1.42 (1.28-1.57)	1.43 (1.28-1.63)	2.75 (2.47-3.11)	5.12 (4.45-5.81)	6.83 (6.14-7.90)	1520
Gender							
Males	99-00	1.70 (1.54-1.88)	1.90 (1.80-2.00)	3.20 (3.00-3.60)	5.50 (4.20-6.70)	7.50 (5.90-9.70)	1083
	01-02	1.64 (1.47-1.82)	1.80 (1.65-1.98)	3.15 (2.76-3.73)	5.52 (4.82-6.35)	7.87 (6.49-9.32)	1335
	03-04	1.62 (1.47-1.78)	1.69 (1.49-1.85)	3.09 (2.81-3.54)	5.65 (5.14-6.16)	8.56 (6.71-9.67)	1281
	05-06	1.66 (1.48-1.85)	1.71 (1.50-1.94)	3.21 (2.76-3.79)	5.48 (4.68-6.22)	7.10 (6.18-8.84)	1271
Females	99-00	1.33 (1.15-1.53)	1.50 (1.20-1.60)	2.80 (2.30-3.30)	5.20 (4.20-5.90)	6.80 (5.60-10.4)	1097
	01-02	1.43 (1.30-1.56)	1.44 (1.29-1.63)	3.11 (2.74-3.43)	4.93 (4.44-5.88)	7.15 (6.32-7.86)	1355
	03-04	1.38 (1.24-1.54)	1.39 (1.18-1.57)	2.71 (2.41-3.15)	4.95 (4.29-5.51)	6.87 (5.65-8.10)	1277
	05-06	1.40 (1.27-1.54)	1.42 (1.30-1.63)	2.70 (2.39-3.19)	5.21 (4.65-5.71)	7.09 (6.24-7.94)	1305
Race/ethnicity							
Mexican Americans	99-00	1.35 (1.25-1.46)	1.40 (1.20-1.50)	2.60 (2.30-2.90)	4.50 (4.10-5.30)	6.30 (5.50-6.80)	692
	01-02	1.21 (1.06-1.37)	1.25 (1.11-1.46)	2.56 (2.04-2.91)	4.35 (3.65-5.49)	6.43 (5.21-8.22)	683
	03-04	1.40 (1.15-1.70)	1.45 (1.22-1.73)	2.62 (1.78-3.38)	4.07 (2.95-6.37)	6.01 (4.01-7.88)	618
	05-06	1.33 (1.24-1.42)	1.36 (1.22-1.50)	2.63 (2.35-2.89)	4.47 (3.80-5.23)	6.21 (5.23-7.00)	652
Non-Hispanic blacks	99-00	1.34 (1.12-1.62)	1.40 (1.20-1.60)	2.50 (2.30-2.90)	5.10 (3.70-6.60)	7.40 (5.40-13.9)	540
	01-02	1.30 (1.14-1.48)	1.42 (1.22-1.62)	2.61 (2.31-2.82)	4.30 (3.70-5.18)	5.99 (4.87-7.26)	667
	03-04	1.27 (1.17-1.39)	1.38 (1.26-1.48)	2.34 (2.05-2.59)	3.77 (3.35-4.36)	5.86 (4.76-7.45)	723
	05-06	1.25 (1.15-1.37)	1.31 (1.21-1.41)	2.40 (2.22-2.61)	4.24 (3.69-4.83)	6.19 (5.23-6.96)	692
Non-Hispanic whites	99-00	1.56 (1.36-1.80)	1.80 (1.60-2.00)	3.30 (2.80-3.70)	5.50 (4.50-6.30)	7.50 (6.20-8.80)	765
	01-02	1.61 (1.46-1.77)	1.68 (1.54-1.85)	3.31 (2.87-3.74)	5.66 (4.94-6.30)	7.73 (6.61-8.49)	1132
	03-04	1.56 (1.37-1.78)	1.61 (1.28-1.92)	3.12 (2.75-3.70)	5.57 (5.04-6.43)	8.08 (6.87-9.53)	1074
	05-06	1.59 (1.42-1.78)	1.66 (1.50-1.86)	3.08 (2.63-3.79)	5.50 (4.90-6.08)	7.10 (6.46-8.24)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.12, 0.12, 0.31, and 0.12 respectively.

Urinary Barium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	1.40 (1.26-1.56)	1.41 (1.28-1.54)	2.54 (2.20-2.91)	4.68 (3.85-5.47)	6.33 (5.47-8.09)	2180
	01-02	1.44 (1.31-1.58)	1.49 (1.35-1.63)	2.76 (2.51-3.03)	4.58 (4.15-4.96)	6.24 (5.28-7.27)	2689
	03-04	1.48 (1.37-1.60)	1.41 (1.31-1.58)	2.68 (2.44-2.89)	4.92 (4.39-5.45)	7.10 (6.29-7.77)	2558
	05-06	1.50 (1.40-1.61)	1.48 (1.37-1.61)	2.75 (2.50-3.03)	4.65 (4.09-5.10)	6.38 (5.62-7.56)	2576
Age group							
6-11 years	99-00	2.37 (1.68-3.32)	2.38 (1.84-2.92)	4.47 (2.55-6.46)	10.2 (3.75-22.0)	11.4 (5.46-22.0)	297
	01-02	2.20 (1.91-2.52)	2.41 (2.19-2.83)	3.91 (3.29-4.51)	5.01 (4.58-6.00)	6.71 (5.20-8.47)	368
	03-04	2.58 (2.22-2.99)	3.00 (2.35-3.29)	4.45 (3.57-5.54)	6.69 (5.59-7.70)	10.3 (6.53-21.0)	290
	05-06	2.14 (1.85-2.48)	2.15 (1.76-2.51)	3.83 (3.10-4.73)	6.19 (4.84-7.83)	10.0 (5.76-11.1)	355
12-19 years	99-00	1.51 (1.34-1.70)	1.40 (1.26-1.59)	2.48 (1.97-3.06)	4.36 (3.23-5.39)	7.62 (4.24-11.4)	621
	01-02	1.45 (1.33-1.59)	1.56 (1.31-1.77)	2.89 (2.68-3.12)	4.52 (3.84-5.20)	5.55 (4.81-6.10)	762
	03-04	1.54 (1.36-1.75)	1.59 (1.39-1.87)	2.60 (2.24-3.48)	4.97 (4.34-5.58)	6.47 (5.38-7.77)	725
	05-06	1.66 (1.50-1.84)	1.73 (1.52-1.93)	3.15 (2.76-3.42)	4.25 (3.88-4.56)	5.00 (4.46-6.68)	701
20 years and older	99-00	1.30 (1.19-1.42)	1.33 (1.20-1.46)	2.32 (2.08-2.62)	4.29 (3.63-4.96)	5.65 (5.28-6.33)	1262
	01-02	1.37 (1.24-1.50)	1.40 (1.24-1.52)	2.53 (2.23-2.84)	4.38 (4.02-5.00)	6.55 (5.00-7.64)	1559
	03-04	1.38 (1.26-1.50)	1.32 (1.22-1.41)	2.39 (2.13-2.70)	4.39 (3.77-5.16)	7.00 (5.45-8.50)	1543
	05-06	1.42 (1.30-1.54)	1.39 (1.26-1.55)	2.59 (2.33-2.82)	4.53 (3.65-5.40)	6.34 (5.37-7.67)	1520
Gender							
Males	99-00	1.32 (1.22-1.42)	1.36 (1.23-1.47)	2.39 (2.11-2.57)	4.24 (3.48-5.00)	5.61 (4.39-10.2)	1083
	01-02	1.30 (1.16-1.45)	1.34 (1.19-1.50)	2.46 (2.14-2.83)	4.51 (3.73-4.96)	5.42 (4.81-7.51)	1334
	03-04	1.36 (1.26-1.47)	1.31 (1.19-1.43)	2.60 (2.37-2.75)	4.36 (3.97-4.72)	6.01 (5.45-6.96)	1281
	05-06	1.36 (1.23-1.50)	1.38 (1.25-1.52)	2.36 (2.19-2.73)	4.24 (3.65-4.82)	5.69 (4.75-7.36)	1271
Females	99-00	1.49 (1.27-1.74)	1.48 (1.29-1.68)	2.65 (2.13-3.46)	4.91 (3.96-6.38)	7.36 (5.25-11.3)	1097
	01-02	1.59 (1.45-1.75)	1.64 (1.48-1.79)	2.98 (2.75-3.30)	4.76 (4.38-5.31)	6.97 (5.86-7.52)	1355
	03-04	1.60 (1.45-1.77)	1.55 (1.35-1.73)	2.78 (2.34-3.25)	5.50 (4.43-6.86)	7.88 (6.28-11.5)	1277
	05-06	1.65 (1.54-1.76)	1.63 (1.45-1.83)	3.09 (2.71-3.38)	4.87 (4.48-5.65)	7.48 (6.04-10.0)	1305
Race/ethnicity							
Mexican Americans	99-00	1.21 (1.10-1.33)	1.18 (1.05-1.38)	2.39 (2.10-2.59)	4.00 (3.33-4.80)	5.31 (4.80-6.51)	692
	01-02	1.18 (1.03-1.34)	1.16 (1.00-1.38)	2.33 (1.90-2.61)	3.68 (3.29-4.10)	4.96 (4.24-6.80)	682
	03-04	1.29 (1.08-1.55)	1.28 (1.03-1.53)	2.25 (1.73-2.97)	3.99 (2.79-5.03)	4.99 (4.24-6.56)	618
	05-06	1.25 (1.17-1.33)	1.21 (1.09-1.33)	2.27 (1.84-2.61)	3.66 (3.07-4.35)	5.11 (4.00-5.95)	652
Non-Hispanic blacks	99-00	.881 (.703-1.11)	.905 (.710-1.06)	1.64 (1.36-2.00)	3.27 (2.26-4.76)	4.84 (3.57-10.8)	540
	01-02	.891 (.777-1.02)	.921 (.754-1.11)	1.64 (1.44-2.03)	2.86 (2.48-3.37)	4.02 (3.52-4.68)	667
	03-04	.915 (.832-1.01)	.963 (.880-1.04)	1.51 (1.39-1.75)	2.62 (2.29-3.04)	3.76 (3.22-4.72)	723
	05-06	.909 (.845-979)	.880 (.820-970)	1.78 (1.56-1.97)	2.99 (2.63-3.14)	3.91 (3.39-4.73)	692
Non-Hispanic whites	99-00	1.56 (1.38-1.77)	1.55 (1.36-1.74)	2.72 (2.27-3.24)	5.00 (3.81-6.02)	6.60 (5.52-10.2)	765
	01-02	1.62 (1.49-1.76)	1.66 (1.49-1.82)	3.04 (2.76-3.32)	4.96 (4.55-5.41)	6.74 (5.57-7.64)	1132
	03-04	1.64 (1.49-1.82)	1.60 (1.40-1.76)	2.88 (2.56-3.26)	5.38 (4.67-6.28)	7.57 (6.69-9.27)	1074
	05-06	1.65 (1.52-1.80)	1.61 (1.46-1.83)	2.95 (2.70-3.26)	4.82 (4.32-5.65)	7.21 (5.69-8.51)	1041

Urinary Beryllium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2690
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	< LOD	< LOD	2576
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	355
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	.140 (<LOD-.170)	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	701
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1560
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	.130 (<LOD-.150)	1335
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	< LOD	< LOD	1271
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	< LOD	< LOD	1305
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	884
	01-02	*	< LOD	< LOD	< LOD	.130 (<LOD-.160)	683
	03-04	*	< LOD	< LOD	< LOD	< LOD	618
	05-06	*	< LOD	< LOD	< LOD	< LOD	652
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	568
	01-02	*	< LOD	< LOD	< LOD	< LOD	667
	03-04	*	< LOD	< LOD	< LOD	< LOD	723
	05-06	*	< LOD	< LOD	< LOD	< LOD	692
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	822
	01-02	*	< LOD	< LOD	< LOD	< LOD	1132
	03-04	*	< LOD	< LOD	< LOD	< LOD	1074
	05-06	*	< LOD	< LOD	< LOD	< LOD	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.13, 0.13, 0.13, and 0.072 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Beryllium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2689
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	< LOD	< LOD	2576
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	355
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	.231 (<LOD-.273)	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	701
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1559
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	.281 (<LOD-.333)	1334
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	< LOD	< LOD	1271
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	< LOD	< LOD	1305
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	884
	01-02	*	< LOD	< LOD	< LOD	.346 (<LOD-.391)	682
	03-04	*	< LOD	< LOD	< LOD	< LOD	618
	05-06	*	< LOD	< LOD	< LOD	< LOD	652
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	568
	01-02	*	< LOD	< LOD	< LOD	< LOD	667
	03-04	*	< LOD	< LOD	< LOD	< LOD	723
	05-06	*	< LOD	< LOD	< LOD	< LOD	692
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	822
	01-02	*	< LOD	< LOD	< LOD	< LOD	1132
	03-04	*	< LOD	< LOD	< LOD	< LOD	1074
	05-06	*	< LOD	< LOD	< LOD	< LOD	1041

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Blood Cadmium

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.412 (.378-.449)	.400 (.300-.400)	.600 (.500-.700)	1.00 (1.00-1.10)	1.40 (1.30-1.40)	7970
	01-02	*	.300 (.300-.400)	.500 (.500-.600)	1.00 (.900-1.10)	1.40 (1.20-1.70)	8945
	03-04	.304 (.289-.320)	.300 (.300-.300)	.500 (.500-.600)	1.10 (1.00-1.20)	1.60 (1.50-1.60)	8372
	05-06	.310 (.294-.327)	.270 (.250-.280)	.510 (.460-.560)	1.02 (.910-1.13)	1.53 (1.34-1.75)	8407
Age group							
1-5 years	99-00	*	< LOD	.300 (<LOD-.400)	.400 (.300-.400)	.400 (.300-.700)	723
	01-02	*	< LOD	< LOD	< LOD	.300 (.300-.300)	898
	03-04	*	< LOD	< LOD	.200 (.200-.300)	.200 (.200-.400)	910
	05-06	*	< LOD	< LOD	< LOD	.230 (.210-.250)	968
6-11 years	99-00	*	< LOD	.300 (<LOD-.400)	.400 (.300-.500)	.500 (.400-.500)	905
	01-02	*	< LOD	< LOD	.300 (.300-.300)	.400 (.400-.400)	1044
	03-04	*	< LOD	.200 (<LOD-.200)	.300 (.200-.300)	.300 (.300-.300)	856
	05-06	*	< LOD	< LOD	.220 (.200-.240)	.260 (.230-.280)	934
12-19 years	99-00	.333 (.304-.366)	.300 (.300-.400)	.400 (.400-.500)	.800 (.600-1.00)	1.10 (.900-1.20)	2135
	01-02	*	< LOD	.300 (.300-.400)	.500 (.400-.700)	.900 (.700-1.20)	2231
	03-04	*	.200 (<LOD-.200)	.300 (.300-.300)	.600 (.500-.700)	.900 (.800-1.10)	2081
	05-06	*	< LOD	.250 (.240-.270)	.520 (.410-.680)	.960 (.820-1.08)	1996
20 years and older	99-00	.468 (.426-513)	.400 (.400-.500)	.700 (.600-.800)	1.10 (1.00-1.20)	1.50 (1.40-1.60)	4207
	01-02	.425 (.400-452)	.400 (.400-.400)	.600 (.600-.700)	1.10 (1.00-1.30)	1.60 (1.40-1.90)	4772
	03-04	.378 (.359-398)	.400 (.300-.400)	.600 (.600-.700)	1.20 (1.20-1.30)	1.80 (1.60-1.90)	4525
	05-06	.373 (.352-395)	.330 (.310-.350)	.610 (.570-.660)	1.17 (1.06-1.26)	1.72 (1.53-1.95)	4509
Gender							
Males	99-00	.403 (.368-441)	.400 (.300-.400)	.600 (.500-.700)	1.00 (.900-1.10)	1.40 (1.30-1.50)	3913
	01-02	*	.300 (<LOD-.300)	.500 (.500-.600)	1.00 (.900-1.10)	1.50 (1.20-1.80)	4339
	03-04	.283 (.266-300)	.300 (.200-.300)	.500 (.500-.500)	1.10 (1.00-1.20)	1.60 (1.50-1.60)	4131
	05-06	*	.240 (.220-.260)	.470 (.420-.530)	1.02 (.910-1.12)	1.53 (1.27-1.86)	4092
Females	99-00	.421 (.386-460)	.400 (.400-.400)	.600 (.500-.700)	1.00 (1.00-1.10)	1.30 (1.20-1.40)	4057
	01-02	.382 (.362-403)	.400 (.300-.400)	.600 (.500-.600)	1.00 (.900-1.10)	1.40 (1.20-1.70)	4606
	03-04	.326 (.309-344)	.300 (.300-.300)	.600 (.500-.600)	1.10 (1.00-1.20)	1.60 (1.50-1.70)	4241
	05-06	.329 (.311-349)	.290 (.280-.310)	.530 (.480-.580)	1.02 (.870-1.18)	1.54 (1.33-1.79)	4315
Race/ethnicity							
Mexican Americans	99-00	.395 (.367-424)	.400 (.400-.400)	.500 (.500-.600)	.800 (.700-1.00)	1.20 (.900-1.30)	2742
	01-02	*	< LOD	.400 (.400-.500)	.600 (.500-.800)	1.00 (.700-1.30)	2268
	03-04	.235 (.216-255)	.200 (.200-.300)	.400 (.300-.400)	.600 (.500-.800)	1.00 (.800-1.50)	2085
	05-06	*	.220 (.200-.240)	.350 (.300-.400)	.580 (.510-.680)	.820 (.710-1.00)	2236
Non-Hispanic blacks	99-00	.393 (.361-427)	.400 (.300-.400)	.600 (.500-.600)	1.00 (.900-1.20)	1.40 (1.20-1.60)	1842
	01-02	*	.300 (<LOD-.300)	.500 (.500-.600)	1.00 (.900-1.10)	1.40 (1.20-1.70)	2219
	03-04	.304 (.275-337)	.300 (.300-.300)	.500 (.400-.600)	1.00 (.900-1.20)	1.50 (1.30-1.70)	2292
	05-06	.307 (.290-326)	.260 (.250-.280)	.490 (.440-.570)	1.03 (.880-1.21)	1.50 (1.23-1.79)	2193
Non-Hispanic whites	99-00	.420 (.376-470)	.400 (.300-.500)	.600 (.500-.700)	1.10 (1.00-1.20)	1.40 (1.30-1.50)	2716
	01-02	*	.300 (.300-.400)	.600 (.500-.600)	1.00 (.900-1.20)	1.50 (1.30-1.80)	3806
	03-04	.313 (.296-331)	.300 (.300-.300)	.600 (.500-.600)	1.10 (1.00-1.20)	1.60 (1.50-1.70)	3478
	05-06	.321 (.300-343)	.270 (.250-.300)	.540 (.470-.610)	1.08 (.930-1.23)	1.64 (1.40-1.94)	3310

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.3, 0.3, 0.14, and 0.2 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Cadmium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
		(95% conf. interval)	50th	75th	90th	95th	
Total	99-00	.193 (.169-.220)	.232 (.214-.249)	.475 (.436-.519)	.858 (.763-.980)	1.20 (1.06-1.34)	2257
	01-02	.210 (.189-.235)	.230 (.207-.255)	.458 (.423-.482)	.839 (.753-.919)	1.20 (1.07-1.28)	2690
	03-04	.211 (.196-.226)	.210 (.200-.230)	.450 (.400-.500)	.800 (.730-.880)	1.15 (.980-1.26)	2543
	05-06	.191 (.170-.216)	.200 (.170-.220)	.400 (.360-.460)	.780 (.700-.860)	1.05 (.960-1.17)	2576
Age group							
6-11 years	99-00	*	.078 (.061-.101)	.141 (.115-.173)	.219 (.178-.233)	.279 (.211-.507)	310
	01-02	.061 (<LOD-.081)	.077 (.067-.092)	.140 (.112-.160)	.219 (.184-.262)	.282 (.260-.326)	368
	03-04	.077 (.065-.090)	.080 (.060-.090)	.120 (.100-.160)	.180 (.160-.310)	.310 (.170-.610)	287
	05-06	.066 (.056-.078)	.060 (.050-.080)	.110 (.090-.130)	.180 (.130-.240)	.240 (.160-.290)	355
12-19 years	99-00	.092 (.067-.126)	.128 (.107-.148)	.203 (.183-.232)	.329 (.272-.372)	.426 (.366-.596)	648
	01-02	.109 (.087-.136)	.135 (.114-.157)	.210 (.189-.247)	.327 (.289-.366)	.452 (.366-.480)	762
	03-04	.121 (.109-.134)	.130 (.110-.150)	.200 (.170-.210)	.300 (.260-.360)	.390 (.330-.490)	724
	05-06	.099 (.090-.109)	.110 (.100-.120)	.170 (.150-.190)	.240 (.210-.280)	.310 (.250-.430)	701
20 years and older	99-00	.281 (.253-.313)	.306 (.261-.339)	.551 (.510-.623)	.980 (.836-1.13)	1.32 (1.13-1.57)	1299
	01-02	.273 (.249-.299)	.280 (.261-.308)	.545 (.493-.607)	.972 (.855-1.06)	1.28 (1.20-1.43)	1560
	03-04	.260 (.238-.284)	.270 (.240-.300)	.530 (.470-.580)	.890 (.800-.990)	1.25 (1.09-1.46)	1532
	05-06	.241 (.213-.272)	.250 (.220-.290)	.490 (.440-.560)	.860 (.790-.930)	1.21 (1.06-1.32)	1520
Gender							
Males	99-00	.199 (.165-.241)	.227 (.193-.263)	.462 (.381-.539)	.892 (.748-1.15)	1.41 (.980-1.83)	1121
	01-02	.201 (.177-.229)	.223 (.191-.257)	.445 (.393-.481)	.875 (.741-1.03)	1.22 (1.12-1.38)	1335
	03-04	.206 (.190-.222)	.210 (.190-.230)	.440 (.390-.490)	.790 (.700-.870)	1.01 (.890-1.25)	1277
	05-06	.195 (.176-.217)	.210 (.190-.230)	.400 (.360-.440)	.800 (.730-.890)	1.17 (1.01-1.30)	1271
Females	99-00	.187 (.153-.229)	.239 (.220-.255)	.492 (.456-.540)	.818 (.705-.980)	1.10 (1.01-1.19)	1136
	01-02	.219 (.192-.251)	.234 (.202-.265)	.466 (.433-.519)	.817 (.733-.886)	1.17 (.918-1.36)	1355
	03-04	.216 (.195-.238)	.210 (.200-.240)	.450 (.400-.530)	.820 (.700-.960)	1.20 (1.02-1.37)	1266
	05-06	.188 (.160-.221)	.190 (.160-.220)	.400 (.350-.480)	.750 (.640-.860)	.980 (.830-1.20)	1305
Race/ethnicity							
Mexican Americans	99-00	.191 (.157-.233)	.202 (.167-.221)	.447 (.351-.551)	.813 (.686-.977)	1.12 (.886-1.38)	780
	01-02	.160 (.135-.189)	.181 (.171-.198)	.322 (.285-.362)	.559 (.430-.733)	.766 (.633-1.15)	683
	03-04	.175 (.151-.203)	.170 (.150-.210)	.350 (.290-.430)	.680 (.520-.820)	1.04 (.820-1.20)	614
	05-06	.173 (.152-.196)	.180 (.160-.200)	.340 (.300-.380)	.560 (.500-.630)	.780 (.660-.900)	652
Non-Hispanic blacks	99-00	.283 (.208-.387)	.316 (.243-.412)	.633 (.498-.806)	1.22 (.892-1.38)	1.48 (1.30-1.72)	546
	01-02	.277 (.229-.336)	.302 (.257-.354)	.589 (.476-.713)	1.04 (.843-1.38)	1.51 (1.28-1.74)	667
	03-04	.265 (.237-.295)	.270 (.220-.320)	.550 (.440-.640)	.960 (.810-1.17)	1.52 (1.06-1.82)	717
	05-06	.236 (.218-.254)	.240 (.210-.260)	.480 (.420-.530)	.830 (.670-.930)	1.04 (.870-1.26)	692
Non-Hispanic whites	99-00	.175 (.148-.206)	.220 (.194-.246)	.455 (.388-.510)	.848 (.714-1.01)	1.17 (.963-1.47)	760
	01-02	.204 (.179-.231)	.221 (.191-.255)	.445 (.394-.479)	.817 (.717-.875)	1.17 (.989-1.24)	1132
	03-04	.209 (.192-.226)	.200 (.190-.220)	.440 (.390-.500)	.790 (.700-.860)	1.13 (.940-1.26)	1070
	05-06	.185 (.159-.216)	.200 (.160-.230)	.400 (.330-.480)	.780 (.670-.920)	1.05 (.940-1.25)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.06, 0.06, 0.06, and 0.042 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**All results are corrected for molybdenum oxide interference in the ICP-MS method.

Urinary Cadmium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.181 (.157-.209)	.219 (.199-.238)	.423 (.391-.446)	.712 (.645-.757)	.941 (.826-1.07)	2257
	01-02	.199 (.181-.218)	.212 (.194-.232)	.404 (.377-.440)	.690 (.630-.754)	.919 (.813-.998)	2689
	03-04	.210 (.201-.219)	.208 (.189-.226)	.412 (.381-.438)	.678 (.650-.716)	.940 (.833-1.04)	2543
	05-06	.189 (.169-.210)	.180 (.160-.200)	.370 (.310-.430)	.650 (.590-.720)	.910 (.770-1.08)	2576
Age group							
6-11 years	99-00	*	.085 (.063-.107)	.148 (.123-.182)	.210 (.171-.316)	.316 (.184-.607)	310
	01-02	.075 (<LOD-.094)	.100 (.083-.112)	.166 (.136-.192)	.233 (.206-.281)	.318 (.221-.440)	368
	03-04	.090 (.078-.104)	.091 (.075-.104)	.126 (.111-.156)	.200 (.147-.350)	.308 (.178-.415)	287
	05-06	.081 (.072-.092)	.080 (.070-.090)	.130 (.110-.140)	.170 (.150-.190)	.200 (.180-.240)	355
12-19 years	99-00	.071 (.051-.098)	.093 (.084-.106)	.147 (.130-.163)	.215 (.204-.240)	.283 (.222-.404)	648
	01-02	.078 (.067-.091)	.091 (.085-.101)	.137 (.123-.143)	.191 (.175-.234)	.280 (.234-.321)	762
	03-04	.086 (.077-.096)	.084 (.074-.097)	.122 (.113-.135)	.176 (.154-.198)	.234 (.187-.274)	724
	05-06	.076 (.071-.081)	.080 (.070-.090)	.120 (.110-.130)	.150 (.140-.180)	.210 (.160-.240)	701
20 years and older	99-00	.267 (.247-.289)	.288 (.261-.304)	.484 (.433-.545)	.769 (.727-.818)	1.07 (.927-1.17)	1299
	01-02	.261 (.236-.289)	.273 (.247-.303)	.481 (.426-.518)	.779 (.691-.850)	.979 (.874-1.12)	1559
	03-04	.268 (.255-.281)	.270 (.247-.292)	.490 (.444-.538)	.767 (.688-.830)	1.02 (.909-1.14)	1532
	05-06	.240 (.216-.267)	.230 (.200-.260)	.440 (.400-.500)	.730 (.660-.820)	1.02 (.850-1.18)	1520
Gender							
Males	99-00	.154 (.131-.182)	.176 (.158-.191)	.329 (.293-.382)	.617 (.537-.700)	.789 (.696-.929)	1121
	01-02	.159 (.143-.177)	.168 (.157-.182)	.335 (.304-.364)	.536 (.491-.653)	.757 (.690-.856)	1334
	03-04	.173 (.161-.187)	.162 (.143-.185)	.325 (.300-.352)	.591 (.560-.631)	.740 (.678-.795)	1277
	05-06	.160 (.145-.177)	.150 (.130-.160)	.300 (.260-.340)	.620 (.560-.670)	.820 (.710-.990)	1271
Females	99-00	.211 (.170-.261)	.267 (.239-.308)	.473 (.423-.551)	.783 (.690-.917)	1.09 (.813-1.38)	1136
	01-02	.245 (.216-.278)	.263 (.228-.297)	.479 (.414-.541)	.792 (.687-.884)	.985 (.876-1.16)	1355
	03-04	.252 (.238-.266)	.253 (.227-.288)	.487 (.438-.533)	.802 (.716-.906)	1.06 (.940-1.21)	1266
	05-06	.220 (.193-.252)	.220 (.180-.250)	.420 (.370-.470)	.690 (.590-.850)	.990 (.780-1.31)	1305
Race/ethnicity							
Mexican Americans	99-00	.175 (.137-.223)	.181 (.144-.225)	.331 (.266-.418)	.622 (.441-.828)	.856 (.674-1.13)	780
	01-02	.156 (.136-.178)	.170 (.150-.184)	.282 (.263-.340)	.501 (.388-.614)	.693 (.507-.839)	682
	03-04	.163 (.147-.181)	.159 (.140-.183)	.296 (.256-.311)	.531 (.418-.667)	.718 (.562-.950)	614
	05-06	.162 (.146-.181)	.150 (.140-.170)	.280 (.220-.340)	.480 (.430-.510)	.570 (.520-.640)	652
Non-Hispanic blacks	99-00	.183 (.140-.240)	.202 (.168-.241)	.414 (.343-.472)	.663 (.516-.827)	.873 (.722-.962)	546
	01-02	.190 (.156-.232)	.196 (.174-.225)	.387 (.336-.449)	.686 (.559-.850)	.917 (.725-1.08)	667
	03-04	.190 (.173-.210)	.185 (.168-.207)	.338 (.288-.431)	.700 (.500-.818)	.865 (.708-1.10)	717
	05-06	.171 (.159-.183)	.160 (.140-.180)	.320 (.290-.370)	.550 (.500-.580)	.700 (.610-.730)	692
Non-Hispanic whites	99-00	.175 (.146-.209)	.219 (.191-.250)	.432 (.387-.470)	.729 (.666-.783)	1.00 (.826-1.16)	760
	01-02	.205 (.184-.229)	.224 (.208-.242)	.421 (.382-.470)	.719 (.668-.784)	.931 (.806-1.05)	1132
	03-04	.220 (.207-.235)	.221 (.197-.253)	.434 (.398-.476)	.687 (.647-.767)	1.00 (.830-1.08)	1070
	05-06	.193 (.169-.221)	.180 (.160-.220)	.390 (.310-.480)	.680 (.630-.750)	.930 (.800-1.07)	1041

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**All results are corrected for molybdenum oxide interference in the ICP-MS method.

Urinary Cesium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	4.35 (4.00-4.74)	4.90 (4.40-5.40)	7.10 (6.60-7.70)	9.60 (8.80-10.3)	11.5 (10.2-13.0)	2464
	01-02	4.81 (4.40-5.26)	5.49 (5.12-5.90)	7.91 (7.47-8.39)	10.4 (9.56-11.4)	12.6 (11.1-13.8)	2690
	03-04	4.67 (4.39-4.97)	5.14 (4.84-5.49)	7.68 (7.20-8.21)	10.6 (9.55-11.4)	12.7 (11.5-13.9)	2558
	05-06	4.69 (4.41-4.98)	5.19 (4.91-5.43)	7.68 (7.21-8.09)	10.1 (9.65-10.9)	12.6 (12.0-13.4)	2576
Age group							
6-11 years	99-00	4.87 (4.08-5.81)	5.70 (4.60-6.70)	7.30 (6.70-8.00)	9.00 (7.90-10.1)	9.70 (9.00-10.8)	340
	01-02	4.87 (4.08-5.82)	5.64 (4.69-6.56)	7.96 (6.77-8.84)	9.88 (8.64-10.6)	11.1 (10.2-12.4)	368
	03-04	5.21 (4.74-5.71)	5.50 (4.76-6.37)	8.08 (7.10-8.83)	11.5 (8.86-12.9)	12.9 (10.8-13.6)	290
	05-06	4.74 (4.31-5.21)	5.38 (4.67-5.60)	7.00 (6.38-7.50)	9.30 (8.60-9.95)	11.2 (9.62-12.9)	355
12-19 years	99-00	4.55 (4.09-5.05)	5.20 (4.40-5.60)	6.90 (6.10-7.80)	8.80 (8.10-9.50)	10.7 (8.90-12.5)	718
	01-02	5.22 (4.57-5.95)	5.62 (5.16-6.12)	7.55 (7.13-8.04)	9.77 (9.12-11.1)	12.0 (10.0-15.0)	762
	03-04	5.04 (4.59-5.54)	5.70 (5.16-6.07)	7.53 (6.91-8.37)	9.71 (8.80-10.4)	11.6 (9.92-13.2)	725
	05-06	4.76 (4.24-5.34)	5.27 (4.80-5.74)	7.50 (6.71-8.04)	9.60 (8.52-10.5)	10.6 (9.68-11.8)	701
20 years and older	99-00	4.26 (3.94-4.62)	4.80 (4.40-5.30)	7.10 (6.50-7.60)	9.80 (8.90-10.7)	11.7 (10.2-13.4)	1406
	01-02	4.74 (4.32-5.20)	5.43 (5.05-5.87)	7.97 (7.43-8.52)	10.6 (9.73-11.5)	12.9 (11.2-14.2)	1560
	03-04	4.56 (4.23-4.90)	5.03 (4.60-5.42)	7.66 (7.01-8.34)	10.7 (9.40-11.5)	12.9 (11.5-14.9)	1543
	05-06	4.67 (4.38-4.99)	5.14 (4.84-5.44)	7.77 (7.32-8.30)	10.4 (9.72-11.5)	13.2 (12.4-13.9)	1520
Gender							
Males	99-00	4.84 (4.35-5.38)	5.50 (4.60-6.00)	7.50 (7.00-8.20)	9.70 (8.80-11.3)	11.7 (10.3-13.0)	1226
	01-02	5.34 (4.89-5.84)	6.13 (5.61-6.64)	8.27 (7.84-9.08)	10.8 (10.1-12.1)	12.8 (11.3-15.0)	1335
	03-04	5.03 (4.73-5.36)	5.59 (5.17-6.00)	7.98 (7.31-8.63)	11.0 (9.53-11.8)	12.9 (11.5-16.1)	1281
	05-06	5.13 (4.78-5.51)	5.37 (5.03-5.71)	7.92 (7.61-8.41)	10.9 (9.96-11.6)	13.2 (12.4-13.9)	1271
Females	99-00	3.95 (3.63-4.29)	4.50 (4.20-4.90)	6.70 (6.20-7.30)	9.10 (8.30-10.0)	11.2 (9.90-12.9)	1238
	01-02	4.36 (3.95-4.81)	4.87 (4.45-5.25)	7.33 (6.71-8.01)	9.77 (9.07-11.0)	12.4 (10.4-13.8)	1355
	03-04	4.35 (4.03-4.70)	4.79 (4.25-5.26)	7.30 (6.87-7.81)	10.2 (9.40-11.0)	12.1 (11.2-13.6)	1277
	05-06	4.30 (3.98-4.65)	4.89 (4.58-5.25)	7.43 (6.99-7.83)	9.79 (9.30-10.5)	12.1 (10.6-13.1)	1305
Race/ethnicity							
Mexican Americans	99-00	4.32 (3.82-4.89)	4.80 (4.30-5.20)	6.70 (6.40-7.20)	9.10 (8.00-9.90)	11.1 (9.60-12.7)	884
	01-02	4.63 (4.10-5.24)	5.29 (4.59-5.89)	7.08 (6.42-7.99)	9.13 (7.86-11.3)	11.3 (8.81-14.9)	683
	03-04	4.94 (4.64-5.27)	5.62 (5.01-6.09)	7.86 (7.15-8.46)	10.3 (8.99-11.3)	11.9 (10.7-14.7)	618
	05-06	4.64 (4.41-4.88)	5.18 (4.91-5.55)	7.29 (6.74-7.73)	9.52 (8.76-9.98)	11.5 (9.88-11.9)	652
Non-Hispanic blacks	99-00	4.94 (4.33-5.64)	5.40 (4.80-6.40)	7.50 (6.90-8.40)	9.80 (8.80-10.8)	11.6 (9.80-13.1)	568
	01-02	4.93 (4.70-5.17)	5.33 (5.05-5.64)	7.36 (6.97-7.59)	9.44 (8.71-9.68)	10.7 (10.1-12.3)	667
	03-04	4.71 (4.47-4.97)	5.12 (4.71-5.49)	7.17 (6.72-7.60)	9.13 (8.52-9.99)	10.7 (9.99-11.4)	723
	05-06	4.78 (4.42-5.18)	5.26 (5.03-5.44)	7.20 (6.63-7.66)	9.14 (8.26-10.6)	11.0 (9.63-13.7)	692
Non-Hispanic whites	99-00	4.25 (3.83-4.72)	4.80 (4.20-5.50)	7.20 (6.60-7.90)	9.70 (8.90-10.7)	11.8 (10.3-13.3)	821
	01-02	4.77 (4.27-5.32)	5.49 (4.99-6.05)	7.98 (7.45-8.61)	10.4 (9.54-11.4)	12.6 (11.0-13.8)	1132
	03-04	4.56 (4.22-4.94)	5.02 (4.59-5.42)	7.60 (7.00-8.23)	10.7 (9.26-11.8)	12.9 (11.5-14.7)	1074
	05-06	4.64 (4.25-5.05)	5.19 (4.76-5.49)	7.77 (7.18-8.46)	10.3 (9.62-11.5)	13.1 (12.1-13.9)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.14, 0.14, 0.2, and 0.066 respectively.

Urinary Cesium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	4.10 (3.96-4.25)	4.13 (3.97-4.27)	5.41 (5.21-5.70)	7.14 (6.83-7.50)	8.64 (8.00-9.30)	2464
	01-02	4.54 (4.30-4.79)	4.44 (4.20-4.64)	6.06 (5.66-6.47)	8.18 (7.62-8.95)	10.2 (8.84-11.7)	2689
	03-04	4.64 (4.42-4.87)	4.42 (4.21-4.74)	6.11 (5.76-6.48)	8.51 (7.99-9.15)	10.6 (9.75-11.0)	2558
	05-06	4.62 (4.37-4.88)	4.51 (4.20-4.76)	6.19 (5.90-6.55)	8.84 (8.14-9.24)	10.8 (9.71-12.1)	2576
Age group							
6-11 years	99-00	5.34 (5.03-5.67)	5.42 (5.03-6.04)	6.63 (6.18-7.13)	8.23 (7.13-9.41)	9.90 (7.88-10.1)	340
	01-02	5.95 (5.48-6.46)	5.91 (5.43-6.53)	7.77 (7.00-8.28)	9.27 (8.35-11.9)	11.9 (9.38-12.3)	368
	03-04	6.07 (5.63-6.53)	6.02 (5.45-6.49)	8.30 (7.16-8.99)	10.8 (9.15-11.8)	11.9 (10.3-15.8)	290
	05-06	5.85 (5.41-6.34)	5.74 (5.21-6.41)	7.65 (6.67-9.11)	10.1 (9.38-10.8)	11.6 (10.1-14.9)	355
12-19 years	99-00	3.43 (3.29-3.58)	3.54 (3.29-3.68)	4.35 (4.17-4.56)	5.31 (4.97-5.79)	6.67 (5.33-8.09)	718
	01-02	3.73 (3.41-4.08)	3.55 (3.36-3.74)	4.74 (4.40-5.14)	6.10 (5.35-7.63)	8.08 (6.44-9.82)	762
	03-04	3.60 (3.37-3.85)	3.51 (3.33-3.72)	4.53 (4.24-4.87)	6.08 (5.14-6.94)	7.27 (6.13-9.07)	725
	05-06	3.66 (3.40-3.93)	3.59 (3.40-3.83)	4.76 (4.30-5.20)	5.93 (5.62-6.62)	7.62 (6.03-8.07)	701
20 years and older	99-00	4.08 (3.88-4.29)	4.06 (3.85-4.29)	5.39 (5.04-5.85)	7.17 (6.84-7.58)	8.61 (7.91-9.30)	1406
	01-02	4.54 (4.30-4.78)	4.43 (4.20-4.59)	5.94 (5.64-6.40)	8.15 (7.46-8.97)	10.2 (8.74-11.7)	1559
	03-04	4.68 (4.46-4.91)	4.47 (4.27-4.80)	6.11 (5.83-6.43)	8.47 (7.76-9.17)	10.5 (9.68-11.2)	1543
	05-06	4.67 (4.42-4.93)	4.54 (4.25-4.78)	6.24 (5.93-6.66)	8.92 (8.29-9.31)	11.2 (9.71-12.7)	1520
Gender							
Males	99-00	3.78 (3.65-3.91)	3.78 (3.61-3.96)	4.96 (4.72-5.20)	6.50 (6.18-6.70)	7.71 (7.01-8.64)	1226
	01-02	4.22 (3.96-4.51)	4.10 (3.87-4.41)	5.60 (5.27-6.03)	7.67 (6.90-8.48)	9.46 (8.22-11.5)	1334
	03-04	4.24 (3.99-4.50)	4.12 (3.89-4.37)	5.66 (5.19-6.06)	7.66 (6.90-8.40)	9.00 (8.36-10.3)	1281
	05-06	4.21 (3.94-4.50)	4.11 (3.72-4.46)	5.75 (5.14-6.11)	7.68 (6.91-8.78)	9.33 (8.84-9.84)	1271
Females	99-00	4.43 (4.20-4.68)	4.45 (4.14-4.77)	5.92 (5.36-6.47)	7.70 (7.16-8.07)	9.41 (8.00-10.4)	1238
	01-02	4.86 (4.58-5.16)	4.72 (4.50-5.06)	6.54 (5.93-7.00)	8.50 (7.84-9.79)	10.3 (8.95-12.2)	1355
	03-04	5.05 (4.77-5.35)	4.77 (4.44-5.14)	6.58 (6.14-7.22)	9.43 (8.56-10.5)	11.3 (10.7-12.3)	1277
	05-06	5.05 (4.78-5.33)	4.86 (4.57-5.17)	6.72 (6.31-7.23)	9.65 (9.23-10.3)	12.6 (11.0-13.3)	1305
Race/ethnicity							
Mexican Americans	99-00	3.99 (3.73-4.25)	3.95 (3.65-4.17)	5.09 (4.79-5.39)	6.65 (6.08-7.10)	7.98 (7.20-8.95)	884
	01-02	4.51 (4.00-5.08)	4.51 (3.82-4.95)	5.91 (5.31-6.64)	7.77 (6.60-10.0)	10.0 (7.60-20.5)	682
	03-04	4.58 (4.16-5.05)	4.51 (4.10-4.92)	5.74 (5.42-6.09)	7.53 (6.59-8.91)	9.44 (8.24-10.6)	618
	05-06	4.36 (4.10-4.64)	4.40 (3.97-4.73)	5.69 (5.24-6.22)	7.23 (6.69-7.80)	8.14 (7.65-9.33)	652
Non-Hispanic blacks	99-00	3.21 (2.90-3.56)	3.26 (3.05-3.44)	4.30 (4.00-4.55)	5.50 (5.00-5.98)	6.33 (5.91-7.04)	568
	01-02	3.38 (3.19-3.57)	3.35 (3.05-3.60)	4.41 (4.15-4.78)	5.87 (5.63-6.29)	6.75 (6.41-7.03)	667
	03-04	3.38 (3.21-3.56)	3.30 (3.08-3.50)	4.31 (4.02-4.62)	5.79 (5.12-6.47)	6.98 (6.38-7.18)	723
	05-06	3.47 (3.34-3.60)	3.40 (3.21-3.60)	4.47 (4.25-4.68)	5.94 (5.52-6.31)	6.95 (6.20-7.51)	692
Non-Hispanic whites	99-00	4.26 (4.07-4.47)	4.28 (4.05-4.50)	5.66 (5.26-6.05)	7.27 (6.84-7.83)	8.75 (7.93-9.38)	821
	01-02	4.81 (4.55-5.08)	4.63 (4.42-4.96)	6.33 (5.91-6.68)	8.46 (7.84-9.39)	10.3 (9.04-11.8)	1132
	03-04	4.81 (4.52-5.12)	4.56 (4.31-4.98)	6.28 (5.95-6.71)	8.63 (7.99-9.28)	10.6 (9.43-11.0)	1074
	05-06	4.82 (4.50-5.17)	4.68 (4.32-5.04)	6.41 (6.00-6.81)	9.18 (8.67-9.53)	11.0 (9.71-12.7)	1041

Urinary Cobalt

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.375 (.336-.419)	.410 (.370-.450)	.630 (.570-.680)	.950 (.890-1.03)	1.32 (1.16-1.48)	2465
	01-02	.379 (.355-.404)	.410 (.380-.430)	.610 (.570-.660)	.940 (.870-1.00)	1.28 (1.15-1.44)	2690
	03-04	.316 (.291-.343)	.330 (.300-.350)	.520 (.490-.550)	.820 (.750-.890)	1.16 (1.08-1.26)	2558
	05-06	.374 (.357-.392)	.390 (.370-.410)	.600 (.560-.630)	.880 (.840-.950)	1.33 (1.17-1.47)	2576
Age group							
6-11 years	99-00	.499 (.427-.583)	.530 (.450-.640)	.750 (.610-.900)	1.03 (.880-1.12)	1.22 (1.03-1.50)	340
	01-02	.452 (.377-.543)	.520 (.430-.610)	.710 (.670-.810)	1.07 (.940-1.21)	1.32 (1.17-1.53)	368
	03-04	.454 (.393-.523)	.460 (.410-.520)	.750 (.590-.900)	1.24 (.910-1.47)	1.68 (1.26-1.81)	290
	05-06	.424 (.383-.468)	.450 (.410-.490)	.660 (.580-.710)	.870 (.830-1.04)	1.16 (.910-1.39)	355
12-19 years	99-00	.519 (.463-.581)	.520 (.490-.570)	.820 (.670-.890)	1.17 (1.01-1.47)	1.52 (1.26-2.56)	719
	01-02	.515 (.469-.564)	.520 (.480-.570)	.750 (.690-.840)	1.24 (1.07-1.32)	1.59 (1.37-1.99)	762
	03-04	.461 (.428-.496)	.480 (.450-.520)	.740 (.650-.800)	1.03 (.940-1.23)	1.60 (1.14-1.92)	725
	05-06	.510 (.451-.577)	.500 (.460-.570)	.820 (.690-.980)	1.30 (1.08-1.40)	1.74 (1.39-2.08)	701
20 years and older	99-00	.343 (.305-.386)	.370 (.330-.420)	.570 (.520-.640)	.880 (.810-.980)	1.28 (1.07-1.39)	1406
	01-02	.352 (.333-.373)	.380 (.350-.410)	.560 (.520-.590)	.860 (.800-.930)	1.15 (1.04-1.42)	1560
	03-04	.285 (.259-.313)	.300 (.270-.330)	.460 (.410-.510)	.690 (.660-.730)	1.06 (.890-1.14)	1543
	05-06	.351 (.332-.371)	.370 (.350-.390)	.550 (.520-.600)	.810 (.760-.880)	1.30 (1.05-1.47)	1520
Gender							
Males	99-00	.371 (.331-.416)	.410 (.370-.450)	.580 (.540-.640)	.820 (.740-.900)	1.01 (.900-1.12)	1227
	01-02	.367 (.338-.399)	.390 (.360-.420)	.550 (.520-.600)	.790 (.740-.850)	1.05 (.960-1.14)	1335
	03-04	.294 (.270-.319)	.320 (.290-.340)	.480 (.440-.500)	.670 (.620-.710)	.870 (.790-.920)	1281
	05-06	.369 (.354-.383)	.380 (.370-.400)	.540 (.510-.570)	.760 (.690-.850)	1.06 (.910-1.27)	1271
Females	99-00	.379 (.333-.431)	.410 (.340-.460)	.680 (.590-.790)	1.17 (.930-1.36)	1.50 (1.28-2.05)	1238
	01-02	.390 (.364-.417)	.430 (.400-.450)	.670 (.620-.700)	1.06 (.980-1.16)	1.46 (1.22-1.81)	1355
	03-04	.339 (.308-.372)	.340 (.310-.370)	.580 (.540-.610)	1.04 (.900-1.13)	1.47 (1.33-1.73)	1277
	05-06	.379 (.351-.409)	.410 (.370-.440)	.660 (.620-.700)	1.04 (.900-1.21)	1.54 (1.30-1.93)	1305
Race/ethnicity							
Mexican Americans	99-00	.418 (.348-.502)	.470 (.370-.530)	.670 (.630-.770)	1.05 (.950-1.19)	1.47 (1.25-1.67)	884
	01-02	.398 (.373-.424)	.430 (.410-.450)	.650 (.600-.710)	.950 (.850-1.03)	1.20 (1.06-1.48)	683
	03-04	.374 (.350-.398)	.350 (.340-.390)	.580 (.530-.620)	1.09 (.920-1.16)	1.33 (1.16-1.73)	618
	05-06	.437 (.404-.473)	.450 (.420-.500)	.680 (.620-.720)	1.11 (.940-1.30)	1.58 (1.33-1.79)	652
Non-Hispanic blacks	99-00	.434 (.405-.465)	.430 (.390-.470)	.680 (.620-.760)	1.17 (1.04-1.26)	1.45 (1.23-2.04)	568
	01-02	.435 (.388-.487)	.420 (.380-.460)	.650 (.540-.810)	1.16 (.850-1.64)	1.75 (1.32-2.22)	667
	03-04	.380 (.348-.414)	.380 (.360-.410)	.600 (.540-.680)	1.01 (.890-1.09)	1.28 (1.01-2.03)	723
	05-06	.412 (.374-.453)	.410 (.360-.440)	.600 (.560-.670)	.930 (.830-1.11)	1.47 (1.12-2.00)	692
Non-Hispanic whites	99-00	.369 (.316-.431)	.410 (.350-.460)	.630 (.550-.700)	.930 (.830-1.08)	1.29 (1.02-1.65)	822
	01-02	.359 (.327-.394)	.390 (.360-.430)	.590 (.520-.660)	.870 (.800-.950)	1.16 (1.04-1.32)	1132
	03-04	.301 (.270-.334)	.310 (.280-.340)	.500 (.460-.540)	.760 (.690-.850)	1.09 (.950-1.26)	1074
	05-06	.361 (.340-.384)	.380 (.360-.410)	.580 (.530-.630)	.860 (.800-.940)	1.30 (1.06-1.50)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.07, 0.07, 0.08, and 0.041 respectively.

Urinary Cobalt (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric	Selected percentiles				Sample size
		mean (95% conf. interval)	50th	75th	90th	95th	
Total	99-00	.353 (.319-.391)	.328 (.302-.365)	.515 (.457-.581)	.821 (.679-.963)	1.16 (.938-1.50)	2465
	01-02	.358 (.333-.384)	.335 (.313-.360)	.523 (.487-.562)	.844 (.750-.955)	1.16 (1.00-1.28)	2689
	03-04	.314 (.303-.325)	.290 (.278-.306)	.455 (.434-.481)	.737 (.703-.781)	1.02 (.911-1.10)	2558
	05-06	.368 (.353-.384)	.340 (.320-.360)	.520 (.490-.550)	.810 (.750-.920)	1.17 (.990-1.27)	2576
Age group							
6-11 years	99-00	.547 (.467-.640)	.554 (.449-.647)	.774 (.626-.938)	1.00 (.833-1.49)	1.25 (.895-1.50)	340
	01-02	.552 (.508-.599)	.548 (.503-.609)	.756 (.660-.829)	1.00 (.900-1.27)	1.30 (1.03-1.73)	368
	03-04	.529 (.471-.593)	.500 (.463-.543)	.689 (.634-.750)	1.04 (.760-1.29)	1.29 (1.04-1.36)	290
	05-06	.523 (.494-.554)	.520 (.480-.570)	.720 (.660-.760)	.900 (.840-1.04)	1.27 (.980-1.45)	355
12-19 years	99-00	.391 (.353-.433)	.378 (.329-.407)	.537 (.469-.595)	.824 (.638-1.17)	1.44 (.821-3.54)	719
	01-02	.368 (.343-.396)	.352 (.327-.372)	.534 (.471-.611)	.851 (.673-.949)	1.06 (.932-1.24)	762
	03-04	.329 (.304-.355)	.316 (.277-.348)	.495 (.442-.561)	.738 (.630-.847)	.952 (.792-1.09)	725
	05-06	.392 (.360-.427)	.360 (.330-.400)	.530 (.480-.620)	.810 (.720-.920)	1.02 (.870-1.48)	701
20 years and older	99-00	.328 (.297-.362)	.306 (.280-.328)	.471 (.428-.522)	.727 (.632-.905)	1.12 (.861-1.36)	1406
	01-02	.337 (.313-.363)	.313 (.294-.337)	.475 (.435-.513)	.792 (.704-.955)	1.15 (.963-1.33)	1559
	03-04	.293 (.282-.304)	.271 (.257-.286)	.400 (.380-.429)	.691 (.616-.744)	.976 (.829-1.10)	1543
	05-06	.350 (.334-.367)	.320 (.300-.340)	.490 (.450-.520)	.780 (.690-.940)	1.17 (.970-1.31)	1520
Gender							
Males	99-00	.290 (.259-.324)	.279 (.248-.301)	.402 (.365-.449)	.608 (.534-.728)	.838 (.667-1.10)	1227
	01-02	.290 (.272-.310)	.278 (.256-.297)	.392 (.361-.425)	.644 (.574-.707)	.848 (.786-.929)	1334
	03-04	.247 (.237-.259)	.234 (.215-.250)	.333 (.313-.352)	.513 (.476-.585)	.700 (.630-.753)	1281
	05-06	.302 (.289-.317)	.290 (.270-.300)	.410 (.370-.440)	.610 (.580-.640)	.770 (.710-.850)	1271
Females	99-00	.426 (.378-.479)	.407 (.362-.457)	.606 (.550-.694)	.960 (.781-1.29)	1.50 (1.11-1.83)	1238
	01-02	.435 (.404-.468)	.408 (.382-.438)	.635 (.560-.708)	1.00 (.879-1.19)	1.29 (1.12-1.60)	1355
	03-04	.393 (.378-.409)	.361 (.342-.381)	.554 (.513-.615)	.937 (.850-1.00)	1.29 (1.10-1.33)	1277
	05-06	.445 (.423-.468)	.420 (.400-.440)	.630 (.590-.700)	.990 (.900-1.17)	1.34 (1.18-1.60)	1305
Race/ethnicity							
Mexican Americans	99-00	.386 (.339-.439)	.376 (.333-.419)	.598 (.500-.669)	.898 (.826-1.00)	1.23 (1.11-1.35)	884
	01-02	.388 (.361-.417)	.361 (.333-.394)	.591 (.500-.662)	.872 (.777-.990)	1.10 (.990-1.27)	682
	03-04	.346 (.326-.368)	.327 (.296-.349)	.542 (.487-.594)	.850 (.753-.963)	1.14 (.963-1.35)	618
	05-06	.411 (.388-.436)	.380 (.360-.400)	.580 (.520-.650)	.900 (.820-1.02)	1.19 (1.05-1.35)	652
Non-Hispanic blacks	99-00	.282 (.275-.289)	.257 (.243-.279)	.417 (.378-.462)	.723 (.600-.785)	.975 (.757-1.60)	568
	01-02	.298 (.275-.323)	.268 (.251-.296)	.444 (.393-.505)	.728 (.582-.917)	1.03 (.740-1.55)	667
	03-04	.273 (.248-.300)	.259 (.239-.281)	.388 (.344-.461)	.700 (.563-.842)	.964 (.733-1.15)	723
	05-06	.299 (.281-.318)	.280 (.240-.300)	.420 (.380-.460)	.700 (.570-.780)	.950 (.790-1.17)	692
Non-Hispanic whites	99-00	.369 (.324-.421)	.352 (.313-.387)	.533 (.452-.611)	.861 (.667-1.16)	1.25 (.895-1.57)	822
	01-02	.362 (.331-.396)	.343 (.313-.368)	.523 (.479-.562)	.830 (.736-.983)	1.16 (.983-1.33)	1132
	03-04	.317 (.301-.334)	.291 (.274-.309)	.457 (.425-.488)	.738 (.683-.804)	1.00 (.857-1.13)	1074
	05-06	.376 (.357-.395)	.350 (.330-.370)	.520 (.490-.580)	.810 (.710-.950)	1.18 (.950-1.43)	1041

Blood Lead

Geometric mean and selected percentiles of blood concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	1.66 (1.60-1.72)	1.60 (1.60-1.70)	2.50 (2.40-2.60)	3.80 (3.60-4.00)	5.00 (4.70-5.50)	7970
	01-02	1.45 (1.39-1.51)	1.40 (1.40-1.50)	2.20 (2.10-2.30)	3.40 (3.20-3.60)	4.50 (4.20-4.70)	8945
	03-04	1.43 (1.36-1.50)	1.40 (1.30-1.50)	2.10 (2.10-2.20)	3.20 (3.10-3.30)	4.20 (3.90-4.40)	8373
	05-06	1.29 (1.23-1.36)	1.27 (1.20-1.34)	2.01 (1.91-2.11)	3.05 (2.86-3.22)	3.91 (3.64-4.18)	8407
Age group							
1-5 years	99-00	2.23 (1.96-2.53)	2.20 (1.90-2.50)	3.40 (2.80-3.90)	4.90 (4.00-6.60)	7.00 (6.10-8.30)	723
	01-02	1.70 (1.55-1.87)	1.60 (1.50-1.80)	2.50 (2.20-2.90)	4.20 (3.50-5.20)	5.80 (4.70-6.90)	898
	03-04	1.77 (1.60-1.95)	1.70 (1.50-1.90)	2.50 (2.30-2.80)	3.90 (3.30-4.60)	5.10 (4.10-6.60)	911
	05-06	1.46 (1.36-1.57)	1.43 (1.34-1.55)	2.10 (1.97-2.20)	2.98 (2.72-3.32)	3.80 (3.49-4.54)	968
6-11 years	99-00	1.51 (1.36-1.66)	1.40 (1.30-1.60)	2.10 (1.80-2.50)	3.30 (2.80-3.80)	4.50 (3.40-6.20)	905
	01-02	1.25 (1.14-1.36)	1.20 (1.00-1.30)	1.70 (1.60-2.00)	2.80 (2.50-3.10)	3.70 (3.00-4.70)	1044
	03-04	1.25 (1.12-1.39)	1.20 (1.10-1.40)	1.80 (1.50-2.10)	2.60 (2.10-3.10)	3.30 (2.50-4.60)	856
	05-06	1.02 (.948-1.10)	.970 (.890-1.01)	1.40 (1.28-1.55)	2.06 (1.80-2.72)	3.00 (2.26-3.81)	934
12-19 years	99-00	1.10 (1.04-1.17)	1.10 (1.00-1.20)	1.50 (1.40-1.70)	2.30 (2.10-2.40)	2.90 (2.70-3.00)	2135
	01-02	.942 (.899-9.986)	.900 (.900-1.00)	1.30 (1.20-1.40)	2.00 (1.90-2.10)	2.70 (2.40-2.90)	2231
	03-04	.946 (.878-1.02)	.900 (.800-1.00)	1.30 (1.20-1.40)	1.90 (1.70-2.10)	2.60 (2.20-3.00)	2081
	05-06	.797 (.746-852)	.740 (.690-.790)	1.08 (.990-1.20)	1.69 (1.50-1.85)	2.23 (1.98-2.46)	1996
20 years and older	99-00	1.75 (1.68-1.81)	1.70 (1.60-1.80)	2.60 (2.50-2.70)	3.90 (3.70-4.10)	5.20 (4.80-5.60)	4207
	01-02	1.56 (1.49-1.62)	1.60 (1.50-1.60)	2.30 (2.30-2.40)	3.60 (3.40-3.70)	4.60 (4.30-5.00)	4772
	03-04	1.52 (1.45-1.60)	1.50 (1.40-1.60)	2.30 (2.20-2.40)	3.30 (3.20-3.50)	4.30 (4.00-4.60)	4525
	05-06	1.41 (1.34-1.48)	1.41 (1.33-1.48)	2.17 (2.04-2.31)	3.22 (3.05-3.43)	4.12 (3.82-4.38)	4509
Gender							
Males	99-00	2.01 (1.93-2.09)	1.90 (1.90-2.00)	2.90 (2.80-3.00)	4.50 (4.10-4.80)	6.00 (5.50-6.50)	3913
	01-02	1.78 (1.71-1.86)	1.80 (1.70-1.80)	2.70 (2.50-2.80)	3.90 (3.80-4.10)	5.40 (5.00-5.50)	4339
	03-04	1.69 (1.62-1.75)	1.60 (1.50-1.70)	2.50 (2.40-2.60)	3.70 (3.40-3.90)	4.80 (4.50-5.20)	4132
	05-06	1.52 (1.42-1.62)	1.49 (1.41-1.58)	2.30 (2.12-2.51)	3.48 (3.20-3.75)	4.36 (4.04-4.76)	4092
Females	99-00	1.37 (1.32-1.43)	1.30 (1.30-1.40)	2.00 (1.90-2.10)	3.10 (2.90-3.30)	4.00 (3.80-4.20)	4057
	01-02	1.19 (1.14-1.25)	1.20 (1.10-1.20)	1.80 (1.70-1.90)	2.60 (2.50-2.80)	3.60 (3.10-4.00)	4606
	03-04	1.22 (1.14-1.31)	1.20 (1.10-1.30)	1.80 (1.70-2.00)	2.70 (2.50-3.00)	3.50 (3.10-3.80)	4241
	05-06	1.11 (1.05-1.17)	1.06 (.980-1.15)	1.73 (1.61-1.84)	2.59 (2.44-2.74)	3.25 (3.12-3.44)	4315
Race/ethnicity							
Mexican Americans	99-00	1.83 (1.75-1.91)	1.80 (1.70-1.90)	2.80 (2.60-2.90)	4.20 (3.90-4.60)	5.80 (5.10-6.60)	2742
	01-02	1.46 (1.34-1.60)	1.50 (1.30-1.60)	2.30 (2.10-2.60)	3.60 (3.40-4.20)	5.40 (4.40-6.70)	2268
	03-04	1.55 (1.43-1.69)	1.50 (1.40-1.60)	2.30 (2.10-2.50)	3.50 (2.90-4.20)	4.90 (3.90-6.40)	2085
	05-06	1.29 (1.21-1.38)	1.26 (1.15-1.36)	2.00 (1.87-2.20)	3.16 (2.79-3.58)	4.22 (3.47-5.36)	2236
Non-Hispanic blacks	99-00	1.87 (1.75-2.00)	1.80 (1.70-2.00)	2.80 (2.60-3.00)	4.30 (4.00-4.60)	5.70 (5.20-6.10)	1842
	01-02	1.65 (1.52-1.80)	1.60 (1.40-1.70)	2.60 (2.30-2.90)	4.20 (3.80-4.70)	5.80 (5.30-6.50)	2219
	03-04	1.69 (1.52-1.89)	1.60 (1.40-1.80)	2.60 (2.20-3.00)	4.10 (3.50-4.70)	5.30 (4.60-6.60)	2293
	05-06	1.39 (1.26-1.53)	1.31 (1.19-1.45)	2.16 (1.95-2.42)	3.48 (3.19-3.80)	4.65 (4.21-5.14)	2193
Non-Hispanic whites	99-00	1.62 (1.55-1.69)	1.60 (1.50-1.70)	2.40 (2.30-2.50)	3.60 (3.40-3.90)	5.00 (4.40-5.70)	2716
	01-02	1.43 (1.37-1.48)	1.40 (1.30-1.50)	2.20 (2.10-2.20)	3.20 (3.10-3.40)	4.20 (3.90-4.50)	3806
	03-04	1.37 (1.32-1.43)	1.30 (1.30-1.40)	2.10 (2.00-2.10)	3.00 (2.80-3.20)	3.90 (3.60-4.30)	3478
	05-06	1.28 (1.19-1.37)	1.27 (1.17-1.38)	1.97 (1.86-2.14)	2.99 (2.73-3.25)	3.82 (3.41-4.20)	3310

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.3, 0.3, 0.28, and 0.25 respectively.

Urinary Lead

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
		(95% conf. interval)	50th	75th	90th	95th	
Total	99-00	.766 (.708-.828)	.800 (.800-.900)	1.40 (1.30-1.50)	2.20 (2.00-2.30)	2.90 (2.60-3.30)	2465
	01-02	.677 (.637-.718)	.700 (.700-.800)	1.20 (1.20-1.30)	2.00 (1.90-2.20)	2.70 (2.50-2.80)	2690
	03-04	.636 (.595-.680)	.640 (.580-.690)	1.04 (0.960-1.12)	1.73 (1.52-1.86)	2.29 (2.03-2.62)	2558
	05-06	.554 (.523-.587)	.570 (.540-.600)	.990 (.910-1.05)	1.58 (1.44-1.73)	2.14 (1.94-2.45)	2576
Age group							
6-11 years	99-00	1.07 (.955-1.20)	1.10 (.900-1.30)	1.50 (1.40-1.70)	2.40 (1.80-3.10)	3.40 (2.40-5.00)	340
	01-02	.753 (.661-857)	.800 (.600-.900)	1.20 (1.10-1.40)	2.10 (1.60-2.40)	2.60 (2.10-3.70)	368
	03-04	.795 (.671-941)	.790 (.640-.900)	1.35 (0.970-1.86)	2.27 (1.62-4.09)	3.33 (2.23-4.41)	290
	05-06	.508 (.447-.579)	.510 (.440-.560)	.740 (.620-.980)	1.33 (1.00-1.86)	1.90 (1.33-2.60)	355
12-19 years	99-00	.659 (.579-.749)	.700 (.600-.800)	1.10 (.900-1.30)	1.80 (1.40-2.20)	2.20 (1.90-2.80)	719
	01-02	.564 (.526-605)	.600 (.500-.600)	1.00 (.800-1.10)	1.60 (1.40-1.70)	2.00 (1.80-2.40)	762
	03-04	.604 (.553-660)	.630 (.570-.680)	.920 (.810-1.02)	1.32 (1.14-1.80)	1.86 (1.44-2.29)	725
	05-06	.472 (.421-530)	.490 (.450-.540)	.780 (.710-.830)	1.19 (1.10-1.45)	1.65 (1.34-1.80)	701
20 years and older	99-00	.752 (.691-818)	.800 (.700-.900)	1.40 (1.30-1.50)	2.20 (2.00-2.40)	2.90 (2.60-3.30)	1406
	01-02	.688 (.641-738)	.700 (.700-.800)	1.20 (1.20-1.30)	2.00 (1.90-2.30)	2.80 (2.50-2.90)	1560
	03-04	.625 (.579-674)	.620 (.560-.700)	1.04 (0.960-1.11)	1.70 (1.52-1.80)	2.21 (2.04-2.49)	1543
	05-06	.574 (.539-612)	.600 (.560-.640)	1.02 (0.970-1.13)	1.65 (1.53-1.81)	2.21 (1.99-2.57)	1520
Gender							
Males	99-00	.923 (.822-1.04)	.900 (.900-1.00)	1.60 (1.40-1.80)	2.50 (2.20-2.90)	3.40 (2.90-3.80)	1227
	01-02	.808 (.757-862)	.800 (.800-.900)	1.40 (1.30-1.50)	2.50 (2.20-2.70)	3.20 (2.90-3.50)	1335
	03-04	.731 (.680-785)	.730 (.680-.800)	1.17 (1.07-1.27)	2.03 (1.78-2.22)	2.66 (2.33-2.91)	1281
	05-06	.672 (.638-707)	.690 (.620-.760)	1.16 (1.04-1.28)	1.78 (1.60-2.00)	2.45 (2.00-2.97)	1271
Females	99-00	.642 (.589-701)	.700 (.600-.800)	1.20 (1.10-1.30)	1.90 (1.60-2.20)	2.40 (2.10-3.00)	1238
	01-02	.573 (.535-613)	.600 (.600-.600)	1.10 (1.00-1.10)	1.60 (1.50-1.80)	2.20 (1.90-2.40)	1355
	03-04	.558 (.506-616)	.540 (.480-.620)	.920 (.820-1.04)	1.49 (1.24-1.75)	1.82 (1.59-2.30)	1277
	05-06	.461 (.425-499)	.460 (.430-.510)	.810 (.730-.880)	1.27 (1.17-1.46)	1.86 (1.54-2.17)	1305
Race/ethnicity							
Mexican Americans	99-00	1.02 (.915-1.13)	1.10 (.900-1.20)	1.80 (1.60-1.90)	2.90 (2.50-3.40)	4.30 (3.10-5.40)	884
	01-02	.833 (.745-931)	.900 (.700-1.00)	1.50 (1.20-1.70)	2.50 (2.00-2.90)	3.30 (2.70-3.80)	683
	03-04	.815 (.710-935)	.840 (.700-990)	1.31 (1.18-1.59)	2.19 (1.86-2.50)	2.66 (2.13-3.97)	618
	05-06	.729 (.653-815)	.770 (.680-.860)	1.32 (1.15-1.59)	2.22 (1.81-2.64)	3.08 (2.50-4.03)	652
Non-Hispanic blacks	99-00	1.11 (1.00-1.23)	1.10 (1.00-1.20)	1.90 (1.50-2.10)	3.00 (2.40-3.50)	4.20 (3.30-5.70)	568
	01-02	.940 (.833-1.06)	.900 (.800-1.00)	1.60 (1.30-1.80)	2.70 (2.10-3.40)	3.70 (2.90-4.80)	667
	03-04	.848 (.729-986)	.850 (.710-1.00)	1.40 (1.10-1.72)	2.14 (1.78-2.64)	2.82 (2.31-3.89)	723
	05-06	.666 (.604-734)	.660 (.590-.760)	1.09 (0.980-1.18)	1.62 (1.42-1.85)	2.24 (1.65-2.90)	692
Non-Hispanic whites	99-00	.695 (.625-773)	.700 (.700-900)	1.30 (1.10-1.40)	2.00 (1.80-2.40)	2.70 (2.30-3.10)	822
	01-02	.610 (.572-651)	.700 (.600-700)	1.10 (1.10-1.20)	1.90 (1.70-2.00)	2.40 (2.30-2.60)	1132
	03-04	.591 (.556-628)	.590 (.540-650)	.960 (.910-990)	1.52 (1.40-1.75)	2.14 (1.78-2.51)	1074
	05-06	.520 (.477-566)	.540 (.490-580)	.950 (.820-1.05)	1.53 (1.30-1.76)	2.07 (1.78-2.45)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.1, 0.1, 0.33, and 0.1 respectively.

Urinary Lead (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.721 (.700-.742)	.701 (.677-.725)	1.11 (1.05-1.15)	1.70 (1.62-1.85)	2.38 (2.22-2.79)	2465
	01-02	.639 (.603-.677)	.635 (.588-.676)	1.03 (.963-1.08)	1.52 (1.43-1.61)	2.03 (1.89-2.22)	2689
	03-04	.632 (.603-.662)	.622 (.594-.655)	.979 (.920-1.03)	1.49 (1.33-1.64)	1.97 (1.73-2.26)	2558
	05-06	.546 (.520-.573)	.530 (.510-.560)	.860 (.810-900)	1.27 (1.15-1.37)	1.71 (1.50-1.89)	2576
Age group							
6-11 years	99-00	1.17 (.975-1.41)	1.06 (.918-1.22)	1.55 (1.22-1.97)	2.71 (1.67-4.66)	4.66 (1.97-18.0)	340
	01-02	.918 (.841-1.00)	.870 (.800-.933)	1.27 (1.12-1.43)	2.33 (1.59-3.64)	3.64 (1.89-5.56)	368
	03-04	.926 (.812-1.06)	.914 (.781-1.03)	1.45 (1.17-1.72)	2.14 (1.62-3.47)	3.47 (2.19-5.31)	290
	05-06	.628 (.563-.701)	.590 (.530-.680)	.870 (.770-.940)	1.29 (1.03-1.82)	1.96 (1.32-2.42)	355
12-19 years	99-00	.496 (.460-.535)	.469 (.408-.508)	.709 (.655-.828)	1.11 (.981-1.28)	1.65 (1.15-2.79)	719
	01-02	.404 (.380-.428)	.375 (.342-.400)	.603 (.541-.702)	.990 (.882-1.18)	1.41 (1.07-1.63)	762
	03-04	.432 (.404-.461)	.404 (.383-.436)	.623 (.551-.730)	.938 (.828-1.06)	1.23 (1.09-1.35)	725
	05-06	.363 (.333-.395)	.340 (.310-.360)	.510 (.460-.600)	.800 (.690-.930)	1.07 (.940-1.23)	701
20 years and older	99-00	.720 (.683-.758)	.712 (.667-.739)	1.10 (1.02-1.18)	1.69 (1.53-1.87)	2.31 (2.15-2.62)	1406
	01-02	.658 (.617-.703)	.652 (.608-.702)	1.05 (.992-1.11)	1.51 (1.40-1.61)	2.00 (1.85-2.19)	1559
	03-04	.641 (.606-.679)	.633 (.605-.670)	.988 (.917-1.04)	1.47 (1.28-1.63)	1.94 (1.72-2.12)	1543
	05-06	.573 (.548-.600)	.570 (.530-.600)	.890 (.850-.960)	1.32 (1.22-1.41)	1.77 (1.53-1.94)	1520
Gender							
Males	99-00	.720 (.679-.763)	.693 (.645-.734)	1.10 (.992-1.22)	1.68 (1.50-2.09)	2.43 (2.15-3.03)	1227
	01-02	.639 (.607-.673)	.638 (.586-.686)	1.01 (.957-1.08)	1.55 (1.41-1.61)	2.06 (1.88-2.43)	1334
	03-04	.615 (.588-.644)	.593 (.561-.639)	.914 (.862-.977)	1.44 (1.25-1.53)	2.00 (1.71-2.28)	1281
	05-06	.551 (.522-.582)	.530 (.510-.580)	.830 (.770-.910)	1.25 (1.13-1.39)	1.77 (1.42-2.20)	1271
Females	99-00	.722 (.681-.765)	.707 (.667-.746)	1.11 (1.05-1.18)	1.74 (1.50-2.02)	2.38 (2.03-2.88)	1238
	01-02	.639 (.594-.688)	.625 (.571-.682)	1.03 (.946-1.11)	1.50 (1.39-1.61)	1.98 (1.85-2.15)	1355
	03-04	.648 (.601-.698)	.649 (.604-.718)	1.03 (.938-1.10)	1.56 (1.34-1.73)	1.96 (1.72-2.20)	1277
	05-06	.541 (.507-.577)	.530 (.500-.580)	.880 (.820-.940)	1.28 (1.12-1.41)	1.64 (1.38-1.91)	1305
Race/ethnicity							
Mexican Americans	99-00	.940 (.876-1.01)	.887 (.796-1.03)	1.43 (1.37-1.58)	2.38 (2.08-2.77)	3.46 (2.78-4.18)	884
	01-02	.810 (.731-.898)	.774 (.702-.893)	1.29 (1.09-1.44)	2.05 (1.75-2.50)	2.78 (2.56-3.33)	682
	03-04	.755 (.681-.838)	.708 (.612-.851)	1.18 (1.09-1.31)	1.86 (1.50-2.26)	2.31 (1.98-2.92)	618
	05-06	.686 (.638-.737)	.680 (.620-.740)	1.00 (.930-1.13)	1.63 (1.39-1.88)	2.20 (1.77-3.20)	652
Non-Hispanic blacks	99-00	.722 (.659-.790)	.671 (.583-.753)	1.11 (.988-1.20)	2.00 (1.56-2.51)	2.83 (2.20-3.88)	568
	01-02	.644 (.559-.742)	.608 (.510-.710)	.962 (.853-1.20)	1.79 (1.36-2.33)	2.75 (2.04-3.98)	667
	03-04	.609 (.529-.701)	.569 (.492-.698)	.900 (.793-1.03)	1.48 (1.11-1.97)	2.24 (1.65-2.88)	723
	05-06	.483 (.459-.508)	.470 (.440-.490)	.740 (.670-.820)	1.18 (1.06-1.29)	1.60 (1.37-1.85)	692
Non-Hispanic whites	99-00	.696 (.668-.725)	.677 (.645-.718)	1.07 (.997-1.14)	1.66 (1.50-1.83)	2.31 (1.94-2.82)	822
	01-02	.615 (.579-.654)	.621 (.571-.667)	1.00 (.933-1.07)	1.46 (1.37-1.52)	1.88 (1.62-2.03)	1132
	03-04	.623 (.592-.655)	.618 (.587-.657)	.971 (.914-1.03)	1.44 (1.25-1.61)	1.85 (1.64-2.10)	1074
	05-06	.541 (.500-.585)	.530 (.490-.580)	.850 (.790-.920)	1.24 (1.12-1.37)	1.62 (1.37-1.94)	1041

Total Blood Mercury

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	.797 (.703-.903)	.800 (.700-.900)	1.70 (1.50-1.90)	3.30 (2.90-3.90)	4.90 (4.30-5.50)	8373
	05-06	.863 (.787-.946)	.830 (.760-.920)	1.66 (1.48-1.93)	3.20 (2.87-3.54)	4.64 (4.17-5.25)	8407
Age group							
1-5 years	03-04	.326 (.285-.372)	.300 (.300-.300)	.500 (.500-.700)	1.00 (.800-1.60)	1.80 (1.30-2.50)	911
	05-06	*	< LOD	.500 (.470-.550)	.940 (.820-1.24)	1.43 (1.25-1.59)	968
6-11 years	03-04	.419 (.363-.484)	.400 (.400-.500)	.700 (.700-.900)	1.30 (1.00-1.60)	1.90 (1.40-3.50)	856
	05-06	*	.410 (.330-.460)	.740 (.630-1.00)	1.43 (1.21-1.87)	2.34 (1.53-3.42)	934
12-19 years	03-04	.490 (.418-.574)	.500 (.400-.600)	1.00 (.800-1.20)	1.80 (1.40-2.30)	2.60 (2.10-3.30)	2081
	05-06	.513 (.461-.570)	.460 (.390-.530)	.850 (.740-1.04)	1.66 (1.31-1.98)	2.41 (2.12-2.90)	1996
20 years and older	03-04	.979 (.860-1.12)	1.00 (.800-1.10)	2.00 (1.70-2.30)	3.80 (3.20-4.40)	5.40 (4.60-6.70)	4525
	05-06	1.06 (.967-1.15)	1.03 (.930-1.15)	1.98 (1.73-2.22)	3.64 (3.33-4.01)	5.31 (4.82-5.67)	4509
Gender							
Males	03-04	.814 (.714-927)	.800 (.700-.900)	1.80 (1.50-2.00)	3.70 (3.20-4.30)	5.40 (4.60-6.50)	4132
	05-06	.864 (.783-954)	.810 (.720-.940)	1.69 (1.48-2.01)	3.30 (2.86-3.73)	4.83 (4.08-5.45)	4092
Females	03-04	.781 (.689-886)	.800 (.700-.900)	1.60 (1.40-1.80)	3.00 (2.50-3.50)	4.40 (3.60-5.30)	4241
	05-06	.864 (.791-943)	.850 (.770-.920)	1.63 (1.44-1.89)	3.09 (2.75-3.46)	4.51 (4.01-5.28)	4315
Race/ethnicity							
Mexican Americans	03-04	.563 (.472-672)	.600 (.500-.700)	1.00 (.800-1.30)	1.90 (1.60-2.40)	3.00 (2.20-3.80)	2085
	05-06	.597 (.524-679)	.580 (.490-670)	1.04 (.870-1.24)	1.70 (1.40-2.12)	2.58 (1.96-3.31)	2236
Non-Hispanic blacks	03-04	.877 (.753-1.02)	.900 (.800-1.00)	1.60 (1.40-1.80)	3.00 (2.30-4.00)	4.40 (3.30-6.00)	2293
	05-06	.823 (.697-972)	.800 (.670-940)	1.50 (1.21-1.92)	2.72 (2.14-3.59)	4.09 (3.22-5.16)	2193
Non-Hispanic whites	03-04	.776 (.655-919)	.800 (.700-.900)	1.70 (1.40-2.00)	3.20 (2.60-3.90)	4.70 (4.00-5.60)	3478
	05-06	.891 (.801-992)	.870 (.770-1.00)	1.74 (1.50-2.10)	3.37 (2.88-3.76)	4.76 (4.18-5.37)	3310

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.2 and 0.33.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Inorganic Blood Mercury

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	.600 (.500-.600)	.700 (.700-.700)	8147
	05-06	*	< LOD	< LOD	.540 (.500-.580)	.660 (.620-.710)	8371
Age group							
1-5 years	03-04	*	< LOD	< LOD	< LOD	.500 (<LOD-.600)	792
	05-06	*	< LOD	< LOD	.430 (<LOD-.470)	.510 (.430-.670)	948
6-11 years	03-04	*	< LOD	< LOD	< LOD	.600 (.500-.600)	842
	05-06	*	< LOD	< LOD	.450 (<LOD-.520)	.560 (.470-.640)	932
12-19 years	03-04	*	< LOD	< LOD	.500 (<LOD-.500)	.600 (.500-.600)	2060
	05-06	*	< LOD	< LOD	.430 (.410-.460)	.540 (.480-.590)	1984
20 years and older	03-04	*	< LOD	< LOD	.600 (.500-.600)	.700 (.700-.800)	4453
	05-06	*	< LOD	< LOD	.570 (.530-.610)	.690 (.650-.750)	4507
Gender							
Males	03-04	*	< LOD	< LOD	.500 (.500-.600)	.600 (.600-.700)	4015
	05-06	*	< LOD	< LOD	.480 (.450-.520)	.600 (.550-.640)	4076
Females	03-04	*	< LOD	< LOD	.600 (.500-.600)	.700 (.700-.800)	4132
	05-06	*	< LOD	< LOD	.580 (.550-.640)	.700 (.670-.780)	4295
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	.500 (.500-.600)	.700 (.600-.800)	2007
	05-06	*	< LOD	< LOD	.530 (.470-.580)	.670 (.560-.830)	2224
Non-Hispanic blacks	03-04	*	< LOD	< LOD	.600 (.500-.600)	.700 (.600-.800)	2240
	05-06	*	< LOD	< LOD	.530 (.470-.600)	.670 (.600-.760)	2183
Non-Hispanic whites	03-04	*	< LOD	< LOD	.600 (.500-.600)	.700 (.600-.700)	3406
	05-06	*	< LOD	< LOD	.540 (.500-.580)	.650 (.610-.710)	3298

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.42 and 0.4.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mercury

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric	Selected percentiles (95% confidence interval)				Sample size
		mean (95% conf. interval)	50th	75th	90th	95th	
Total	03-04	.447 (.406-.492)	.420 (.360-.480)	1.00 (.870-1.14)	2.08 (1.78-2.42)	3.19 (2.76-3.55)	2538
	05-06	.468 (.426-.514)	.460 (.410-.510)	1.03 (.900-1.12)	2.11 (1.88-2.36)	2.94 (2.58-3.26)	2578
Age group							
6-11 years	03-04	.254 (.213-304)	.200 (.160-.250)	.440 (.330-.580)	1.16 (.610-1.61)	1.96 (1.13-2.97)	287
	05-06	.333 (.267-416)	.320 (.250-.390)	.650 (.470-840)	1.32 (.930-1.88)	2.18 (1.28-3.40)	355
12-19 years	03-04	.358 (.313-408)	.330 (.290-.370)	.700 (.530-840)	1.60 (1.14-2.52)	2.93 (1.88-3.66)	722
	05-06	.372 (.286-486)	.350 (.270-.470)	.740 (.580-920)	1.61 (.970-2.81)	2.59 (1.40-4.45)	703
20 years and older	03-04	.495 (.442-555)	.480 (.410-.570)	1.12 (.930-1.29)	2.20 (1.85-2.65)	3.33 (2.76-3.88)	1529
	05-06	.505 (.468-545)	.510 (.460-.560)	1.11 (1.04-1.16)	2.23 (1.97-2.50)	3.11 (2.64-3.37)	1520
Gender							
Males	03-04	.433 (.405-463)	.400 (.350-.460)	.940 (.840-1.05)	1.88 (1.63-2.18)	2.68 (2.34-3.05)	1266
	05-06	.464 (.411-523)	.450 (.400-.520)	.980 (.860-1.11)	2.03 (1.57-2.48)	3.00 (2.48-3.37)	1270
Females	03-04	.460 (.396-534)	.430 (.330-530)	1.07 (.870-1.28)	2.26 (1.77-2.90)	3.54 (2.76-4.31)	1272
	05-06	.472 (.424-525)	.470 (.390-550)	1.07 (.900-1.19)	2.14 (1.84-2.50)	2.89 (2.60-3.38)	1308
Race/ethnicity							
Mexican Americans	03-04	.416 (.340-509)	.360 (.280-430)	.960 (.700-1.23)	2.19 (1.39-3.24)	3.16 (1.99-6.30)	619
	05-06	.451 (.369-551)	.420 (.310-560)	1.01 (.780-1.25)	2.22 (1.48-2.64)	3.00 (2.27-4.01)	651
Non-Hispanic blacks	03-04	.476 (.413-549)	.430 (.360-530)	.890 (.770-1.00)	1.96 (1.60-2.31)	3.09 (2.03-4.89)	713
	05-06	.453 (.384-533)	.450 (.380-550)	.890 (.710-1.13)	1.78 (1.34-2.29)	2.57 (2.21-3.15)	691
Non-Hispanic whites	03-04	.441 (.382-509)	.420 (.330-520)	1.01 (.840-1.23)	2.08 (1.67-2.46)	3.24 (2.67-3.60)	1066
	05-06	.459 (.409-513)	.440 (.400-510)	1.00 (.860-1.12)	2.07 (1.77-2.40)	2.81 (2.47-3.37)	1044

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.14 and 0.11.

Urinary Mercury (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	.443 (.404-.486)	.447 (.392-.498)	.909 (.785-1.00)	1.65 (1.40-1.86)	2.35 (1.88-2.85)	2537
	05-06	.460 (.414-.511)	.450 (.410-.510)	.870 (.790-1.00)	1.63 (1.44-1.75)	2.26 (2.12-2.50)	2578
Age group							
6-11 years	03-04	.297 (.246-.358)	.276 (.208-.347)	.485 (.391-.630)	1.25 (.667-1.79)	1.79 (1.11-2.61)	286
	05-06	.411 (.323-.524)	.390 (.290-.500)	.710 (.510-.960)	1.30 (.990-2.12)	2.55 (1.38-3.50)	355
12-19 years	03-04	.255 (.225-.289)	.217 (.196-.275)	.464 (.376-.535)	1.06 (.714-1.39)	1.67 (1.13-2.03)	722
	05-06	.286 (.230-.356)	.260 (.200-.320)	.500 (.380-.660)	1.09 (.660-1.70)	1.76 (1.11-2.67)	703
20 years and older	03-04	.508 (.455-.566)	.525 (.447-.616)	1.00 (.875-1.09)	1.76 (1.46-2.11)	2.54 (2.04-3.00)	1529
	05-06	.503 (.461-.549)	.510 (.470-.550)	.940 (.850-1.07)	1.69 (1.50-1.86)	2.31 (2.12-2.54)	1520
Gender							
Males	03-04	.365 (.333-400)	.362 (.309-.417)	.696 (.620-.784)	1.31 (1.18-1.44)	1.87 (1.51-2.30)	1266
	05-06	.380 (.336-431)	.390 (.330-.440)	.740 (.600-.890)	1.27 (1.09-1.47)	1.73 (1.62-1.85)	1270
Females	03-04	.532 (.472-599)	.545 (.455-.652)	1.06 (.969-1.21)	1.88 (1.64-2.30)	2.77 (2.12-3.56)	1271
	05-06	.552 (.494-617)	.540 (.490-.620)	1.09 (.850-1.27)	1.96 (1.72-2.14)	2.78 (2.35-3.17)	1308
Race/ethnicity							
Mexican Americans	03-04	.384 (.307-480)	.365 (.280-.455)	.768 (.619-.990)	1.62 (1.23-2.16)	2.32 (1.78-4.01)	618
	05-06	.425 (.337-536)	.400 (.310-.490)	.840 (.560-1.29)	1.82 (1.30-2.47)	2.63 (2.22-3.20)	651
Non-Hispanic blacks	03-04	.343 (.301-391)	.306 (.265-.368)	.587 (.522-.687)	1.28 (.964-1.63)	2.13 (1.41-2.87)	713
	05-06	.328 (.285-378)	.320 (.270-.370)	.610 (.470-.780)	1.15 (.930-1.40)	1.64 (1.29-1.96)	691
Non-Hispanic whites	03-04	.463 (.400-537)	.476 (.385-.588)	.970 (.800-1.07)	1.67 (1.32-2.11)	2.40 (1.88-2.90)	1066
	05-06	.475 (.426-531)	.490 (.440-.540)	.890 (.820-1.02)	1.61 (1.42-1.75)	2.23 (1.98-2.50)	1044

Urinary Molybdenum

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	45.9 (40.1-52.6)	50.7 (44.6-58.4)	84.9 (78.7-92.3)	135 (125-146)	180 (154-216)	2257
	01-02	45.0 (42.1-48.0)	52.4 (48.9-55.5)	83.4 (79.1-88.7)	124 (117-130)	165 (145-176)	2690
	03-04	39.7 (37.7-41.7)	44.5 (41.6-46.7)	78.5 (74.9-82.3)	111 (105-118)	138 (133-146)	2558
	05-06	45.0 (42.4-47.8)	51.0 (47.2-54.7)	81.5 (77.4-85.8)	127 (117-132)	158 (144-174)	2576
Age group							
6-11 years	99-00	78.2 (61.0-100)	84.8 (67.7-105)	126 (106-147)	178 (147-259)	267 (159-840)	310
	01-02	63.3 (53.4-75.0)	69.2 (63.0-77.6)	109 (94.5-124)	169 (138-197)	197 (161-291)	368
	03-04	62.2 (56.7-68.3)	71.3 (55.7-84.1)	108 (92.7-122)	138 (127-152)	181 (138-235)	290
	05-06	65.6 (56.6-76.0)	73.5 (62.8-85.5)	108 (98.6-115)	154 (130-176)	181 (154-205)	355
12-19 years	99-00	54.3 (47.6-62.0)	60.6 (52.2-70.3)	93.3 (79.9-109)	146 (112-171)	188 (146-216)	648
	01-02	60.6 (55.5-66.2)	65.7 (58.7-73.1)	97.1 (91.8-108)	145 (129-159)	179 (155-227)	762
	03-04	52.5 (49.0-56.3)	59.6 (55.5-65.1)	87.3 (84.5-91.4)	118 (105-125)	143 (130-156)	725
	05-06	59.1 (53.7-65.1)	63.8 (57.9-69.4)	96.6 (86.3-103)	136 (127-147)	173 (148-202)	701
20 years and older	99-00	41.7 (36.7-47.4)	46.6 (40.5-52.5)	76.7 (73.4-82.2)	126 (114-134)	168 (143-206)	1299
	01-02	41.1 (38.3-44.1)	47.6 (43.7-51.2)	79.1 (71.9-83.6)	114 (103-124)	150 (130-166)	1560
	03-04	35.9 (34.0-38.0)	40.3 (37.6-42.1)	71.5 (67.3-75.2)	105 (98.6-111)	133 (119-144)	1543
	05-06	41.3 (38.7-44.0)	46.0 (41.7-49.6)	75.7 (72.1-80.3)	116 (107-127)	153 (135-171)	1520
Gender							
Males	99-00	52.7 (45.7-60.7)	57.5 (48.5-68.4)	93.2 (83.8-106)	150 (128-187)	215 (161-278)	1121
	01-02	51.0 (46.6-55.7)	56.9 (52.0-62.6)	88.5 (81.6-96.5)	130 (120-141)	169 (145-194)	1335
	03-04	45.5 (43.3-47.8)	51.0 (48.1-55.4)	85.8 (82.8-90.7)	119 (112-130)	148 (136-163)	1281
	05-06	50.9 (48.2-53.9)	56.0 (51.0-60.3)	85.7 (80.3-92.8)	130 (122-136)	161 (145-177)	1271
Females	99-00	40.4 (34.8-46.8)	45.6 (40.4-52.0)	77.3 (71.0-85.7)	119 (105-138)	154 (132-180)	1136
	01-02	39.9 (37.2-42.9)	45.8 (42.8-49.3)	78.4 (72.6-82.9)	115 (104-128)	158 (130-177)	1355
	03-04	34.9 (32.2-37.7)	37.9 (33.5-41.6)	67.3 (64.6-72.2)	101 (97.3-108)	127 (114-139)	1277
	05-06	40.0 (36.4-43.8)	45.6 (40.0-51.0)	75.6 (71.2-82.0)	118 (107-128)	154 (136-179)	1305
Race/ethnicity							
Mexican Americans	99-00	47.0 (42.1-52.4)	53.2 (49.2-59.0)	80.6 (73.7-91.7)	121 (103-139)	152 (120-217)	780
	01-02	49.3 (46.5-52.3)	55.7 (50.4-61.0)	86.4 (80.8-94.1)	133 (113-155)	177 (142-207)	683
	03-04	47.0 (43.1-51.1)	54.4 (48.2-59.9)	82.9 (73.2-91.0)	121 (106-143)	152 (141-169)	618
	05-06	55.1 (51.7-58.7)	58.4 (54.1-63.6)	98.3 (91.5-105)	140 (134-150)	177 (153-200)	652
Non-Hispanic blacks	99-00	57.7 (51.0-65.2)	62.2 (55.0-71.5)	97.8 (85.0-110)	153 (126-188)	206 (150-274)	546
	01-02	53.2 (49.9-56.7)	60.3 (55.1-63.8)	90.0 (81.0-101)	132 (121-147)	166 (147-170)	667
	03-04	46.0 (41.7-50.8)	46.2 (40.9-55.2)	82.3 (73.3-91.3)	117 (109-129)	156 (135-175)	723
	05-06	48.1 (44.7-51.8)	52.0 (48.3-55.7)	80.0 (71.6-89.4)	125 (112-133)	160 (139-189)	692
Non-Hispanic whites	99-00	44.5 (37.0-53.4)	48.5 (41.1-59.8)	85.0 (76.7-96.5)	135 (119-154)	187 (146-223)	760
	01-02	42.2 (38.5-46.2)	48.9 (44.2-53.2)	80.7 (71.9-85.8)	117 (108-129)	152 (134-180)	1132
	03-04	37.1 (34.7-39.6)	41.3 (38.1-44.5)	75.2 (69.2-79.6)	107 (99.3-115)	130 (119-142)	1074
	05-06	42.8 (39.7-46.1)	48.6 (42.3-53.4)	79.0 (73.5-84.0)	123 (108-132)	156 (136-178)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.8, 0.8, 1.5, and 0.92 respectively.

Urinary Molybdenum (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	43.2 (40.0-46.6)	41.6 (38.5-45.2)	63.5 (59.3-68.8)	108 (97.3-115)	144 (125-171)	2257
	01-02	42.5 (39.9-45.2)	42.2 (40.1-45.2)	62.0 (58.4-66.4)	98.8 (90.1-109)	130 (120-149)	2689
	03-04	39.4 (37.6-41.3)	39.2 (37.9-40.7)	58.3 (55.6-61.5)	89.0 (80.5-99.0)	120 (107-135)	2558
	05-06	44.3 (42.4-46.3)	43.9 (41.8-45.7)	65.9 (61.8-68.6)	97.3 (92.5-103)	132 (125-143)	2576
Age group							
6-11 years	99-00	85.9 (73.7-100)	79.3 (71.6-88.4)	122 (107-133)	173 (130-243)	214 (154-1040)	310
	01-02	77.2 (73.1-81.5)	77.6 (71.8-84.5)	109 (99.4-120)	159 (129-170)	185 (165-219)	368
	03-04	72.5 (65.2-80.7)	73.5 (65.1-79.9)	101 (84.9-117)	132 (107-158)	160 (129-257)	290
	05-06	81.0 (71.9-91.3)	78.6 (72.1-89.0)	112 (93.7-134)	161 (133-199)	201 (160-261)	355
12-19 years	99-00	41.9 (39.3-44.6)	40.5 (37.7-44.4)	57.3 (51.5-62.5)	85.4 (67.4-107)	112 (78.4-185)	648
	01-02	43.4 (40.8-46.1)	44.1 (40.8-47.2)	60.8 (57.6-63.7)	85.5 (79.7-93.8)	106 (94.8-118)	762
	03-04	37.5 (35.4-39.8)	38.9 (36.9-41.8)	53.2 (50.3-56.1)	71.9 (64.6-76.9)	81.0 (74.3-102)	725
	05-06	45.5 (42.5-48.7)	45.7 (41.3-49.2)	64.6 (58.5-71.2)	91.4 (75.3-102)	109 (95.0-131)	701
20 years and older	99-00	39.6 (36.9-42.6)	38.5 (36.1-41.0)	56.4 (53.5-60.7)	92.5 (83.1-100)	122 (116-147)	1299
	01-02	39.3 (36.8-42.0)	39.6 (36.4-42.1)	57.2 (52.9-61.0)	86.7 (75.2-96.8)	123 (109-139)	1559
	03-04	36.9 (35.0-38.9)	37.0 (35.7-38.4)	53.5 (50.0-56.9)	79.8 (75.9-87.5)	118 (101-134)	1543
	05-06	41.2 (39.3-43.1)	40.5 (38.8-42.7)	59.1 (55.6-62.8)	87.9 (79.7-96.9)	119 (103-132)	1520
Gender							
Males	99-00	40.8 (37.5-44.3)	38.5 (37.2-40.4)	62.4 (55.9-68.4)	101 (83.9-118)	131 (112-179)	1121
	01-02	40.3 (37.1-43.8)	40.2 (36.3-43.3)	60.5 (54.8-66.3)	91.3 (83.4-106)	123 (107-155)	1334
	03-04	38.3 (36.1-40.7)	37.8 (36.1-39.3)	56.3 (53.3-59.3)	85.7 (77.2-96.7)	118 (100-139)	1281
	05-06	41.8 (39.5-44.2)	41.7 (39.2-44.1)	62.1 (58.1-67.4)	94.6 (84.2-101)	126 (112-132)	1271
Females	99-00	45.5 (41.5-50.0)	44.1 (39.5-48.8)	64.4 (59.5-70.5)	112 (95.2-121)	152 (122-181)	1136
	01-02	44.6 (42.2-47.1)	45.1 (42.2-46.9)	63.6 (59.5-69.4)	107 (92.5-119)	136 (117-169)	1355
	03-04	40.5 (38.1-43.0)	41.1 (38.7-43.7)	61.4 (56.8-65.1)	90.1 (82.2-103)	122 (115-142)	1277
	05-06	46.9 (44.7-49.2)	46.5 (43.9-48.8)	67.2 (63.3-71.7)	103 (93.6-110)	157 (126-173)	1305
Race/ethnicity							
Mexican Americans	99-00	42.9 (40.6-45.4)	43.2 (40.9-45.6)	61.6 (57.2-65.5)	89.5 (80.0-103)	115 (93.7-137)	780
	01-02	48.1 (44.3-52.2)	48.4 (44.8-52.3)	71.7 (66.4-76.0)	103 (90.0-120)	129 (109-155)	682
	03-04	43.5 (40.5-46.8)	43.5 (41.0-46.2)	62.8 (56.8-67.2)	85.9 (79.5-97.0)	112 (97.0-133)	618
	05-06	51.8 (49.9-53.8)	52.1 (49.7-54.7)	73.5 (69.5-77.4)	106 (99.5-111)	133 (112-151)	652
Non-Hispanic blacks	99-00	37.2 (33.4-41.6)	37.1 (33.0-41.2)	55.9 (49.6-63.3)	88.2 (69.1-112)	119 (88.3-141)	546
	01-02	36.5 (34.1-39.0)	37.5 (35.1-38.9)	57.1 (49.7-62.4)	78.3 (71.5-92.0)	109 (81.1-127)	667
	03-04	33.1 (30.5-35.9)	31.7 (30.1-34.7)	47.2 (43.7-52.1)	72.9 (64.6-78.4)	90.5 (78.4-118)	723
	05-06	34.9 (33.1-36.8)	35.4 (32.7-38.1)	53.5 (49.7-55.8)	81.1 (75.4-89.4)	102 (89.4-119)	692
Non-Hispanic whites	99-00	44.5 (40.2-49.2)	42.1 (38.8-47.3)	65.3 (58.9-71.3)	116 (101-126)	172 (131-195)	760
	01-02	42.5 (39.3-46.0)	41.9 (39.3-45.6)	61.2 (57.1-67.2)	104 (88.7-120)	138 (120-163)	1132
	03-04	39.1 (37.2-41.1)	39.3 (37.7-40.8)	58.1 (54.6-61.4)	87.4 (78.9-96.7)	118 (106-134)	1074
	05-06	44.5 (42.4-46.6)	43.9 (41.7-45.7)	65.0 (59.9-68.5)	97.3 (90.7-105)	132 (119-152)	1041

Urinary Platinum

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2690
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	.009 (<LOD-.012)	.014 (.009-.025)	2576
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	.010 (<LOD-.011)	.014 (.010-.020)	355
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	.012 (.009-.019)	701
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1560
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	.009 (<LOD-.014)	.014 (.009-.032)	1520
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	< LOD	1335
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	.009 (<LOD-.012)	.012 (.009-.020)	1271
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	.010 (<LOD-.014)	.015 (.010-.033)	1305
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	884
	01-02	*	< LOD	< LOD	< LOD	< LOD	683
	03-04	*	< LOD	< LOD	< LOD	< LOD	618
	05-06	*	< LOD	< LOD	.010 (<LOD-.014)	.014 (.009-.023)	652
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	568
	01-02	*	< LOD	< LOD	< LOD	< LOD	667
	03-04	*	< LOD	< LOD	< LOD	< LOD	723
	05-06	*	< LOD	< LOD	< LOD	.011 (.009-.016)	692
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	822
	01-02	*	< LOD	< LOD	< LOD	< LOD	1132
	03-04	*	< LOD	< LOD	< LOD	< LOD	1074
	05-06	*	< LOD	< LOD	.009 (<LOD-.012)	.013 (.009-.026)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.04, 0.04, 0.07, and 0.009 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Platinum (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2689
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	.021 (<LOD-.023)	.029 (.026-.035)	2576
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	.020 (<LOD-.027)	.030 (.021-.050)	355
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	.017 (.012-.026)	701
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1559
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	.022 (<LOD-.025)	.030 (.026-.035)	1520
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	< LOD	1334
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	.014 (<LOD-.016)	.021 (.016-.025)	1271
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	.026 (<LOD-.030)	.033 (.029-.050)	1305
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	884
	01-02	*	< LOD	< LOD	< LOD	< LOD	682
	03-04	*	< LOD	< LOD	< LOD	< LOD	618
	05-06	*	< LOD	< LOD	.016 (<LOD-.019)	.023 (.017-.032)	652
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	568
	01-02	*	< LOD	< LOD	< LOD	< LOD	667
	03-04	*	< LOD	< LOD	< LOD	< LOD	723
	05-06	*	< LOD	< LOD	< LOD	.018 (.014-.022)	692
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	822
	01-02	*	< LOD	< LOD	< LOD	< LOD	1132
	03-04	*	< LOD	< LOD	< LOD	< LOD	1074
	05-06	*	< LOD	< LOD	.023 (<LOD-.025)	.030 (.027-.035)	1041

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Thallium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.176 (.162-.192)	.200 (.180-.220)	.290 (.270-.330)	.400 (.370-.420)	.450 (.430-.480)	2413
	01-02	.165 (.154-.177)	.190 (.180-.200)	.280 (.260-.290)	.370 (.350-.390)	.440 (.410-.470)	2653
	03-04	.155 (.145-.165)	.170 (.160-.180)	.270 (.250-.290)	.370 (.340-.400)	.440 (.410-.490)	2558
	05-06	.158 (.151-.165)	.180 (.170-.190)	.270 (.260-.280)	.360 (.350-.390)	.430 (.410-.460)	2576
Age group							
6-11 years	99-00	.201 (.167-.243)	.210 (.150-.280)	.310 (.250-.350)	.410 (.330-.450)	.450 (.350-.590)	336
	01-02	.172 (.147-.202)	.200 (.160-.220)	.290 (.230-.330)	.350 (.340-.370)	.390 (.360-.430)	362
	03-04	.191 (.170-.215)	.190 (.170-.230)	.300 (.250-.370)	.430 (.360-.500)	.510 (.430-.690)	290
	05-06	.174 (.158-.192)	.190 (.170-.210)	.280 (.250-.300)	.380 (.320-.430)	.430 (.400-.480)	355
12-19 years	99-00	.202 (.181-.225)	.220 (.200-.240)	.300 (.270-.340)	.410 (.390-.430)	.470 (.430-.510)	697
	01-02	.200 (.182-.220)	.220 (.190-.250)	.310 (.290-.320)	.370 (.350-.420)	.470 (.400-.500)	746
	03-04	.201 (.185-.218)	.220 (.210-.240)	.310 (.290-.320)	.410 (.360-.470)	.500 (.420-.560)	725
	05-06	.182 (.165-.200)	.210 (.190-.230)	.290 (.270-.310)	.370 (.350-.400)	.430 (.390-.480)	701
20 years and older	99-00	.170 (.157-.183)	.190 (.180-.210)	.290 (.260-.320)	.400 (.370-.420)	.450 (.420-.480)	1380
	01-02	.159 (.147-.173)	.190 (.170-.200)	.270 (.250-.290)	.380 (.350-.400)	.440 (.410-.490)	1545
	03-04	.145 (.134-.156)	.160 (.150-.170)	.250 (.240-.270)	.360 (.330-.390)	.420 (.390-.460)	1543
	05-06	.152 (.144-.161)	.170 (.160-.180)	.260 (.240-.270)	.360 (.340-.390)	.440 (.400-.470)	1520
Gender							
Males	99-00	.197 (.179-.217)	.220 (.200-.240)	.320 (.280-.350)	.400 (.370-.440)	.450 (.420-.520)	1200
	01-02	.184 (.173-.196)	.210 (.200-.230)	.290 (.280-.300)	.380 (.360-.400)	.430 (.400-.470)	1313
	03-04	.167 (.156-.178)	.190 (.180-.200)	.280 (.260-.300)	.370 (.340-.400)	.430 (.400-.480)	1281
	05-06	.171 (.163-.179)	.190 (.180-.200)	.270 (.260-.280)	.370 (.360-.390)	.430 (.410-.470)	1271
Females	99-00	.159 (.145-.175)	.180 (.150-.200)	.270 (.250-.300)	.390 (.350-.420)	.460 (.410-.490)	1213
	01-02	.149 (.137-.163)	.160 (.150-.180)	.260 (.230-.290)	.370 (.330-.400)	.440 (.400-.500)	1340
	03-04	.144 (.133-.156)	.160 (.140-.170)	.250 (.230-.280)	.370 (.330-.410)	.450 (.410-.510)	1277
	05-06	.146 (.138-.155)	.160 (.150-.180)	.260 (.240-.270)	.360 (.350-.380)	.440 (.400-.460)	1305
Race/ethnicity							
Mexican Americans	99-00	.172 (.150-.196)	.200 (.160-.230)	.270 (.250-.300)	.370 (.320-.420)	.450 (.370-.520)	861
	01-02	.160 (.148-.173)	.180 (.160-.200)	.260 (.240-.270)	.340 (.310-.360)	.400 (.350-.440)	675
	03-04	.171 (.160-.183)	.200 (.170-.220)	.280 (.260-.310)	.360 (.340-.420)	.450 (.390-.480)	618
	05-06	.158 (.149-.167)	.180 (.170-.190)	.250 (.240-.270)	.330 (.300-.360)	.400 (.360-.440)	652
Non-Hispanic blacks	99-00	.217 (.197-.239)	.230 (.220-.260)	.350 (.300-.390)	.450 (.400-.520)	.550 (.460-.630)	561
	01-02	.202 (.187-.218)	.220 (.200-.230)	.300 (.270-.340)	.410 (.380-.440)	.520 (.440-.590)	657
	03-04	.185 (.167-.206)	.190 (.170-.220)	.290 (.250-.330)	.410 (.330-.490)	.490 (.410-.640)	723
	05-06	.188 (.169-.210)	.210 (.180-.230)	.300 (.270-.320)	.390 (.360-.440)	.500 (.430-.530)	692
Non-Hispanic whites	99-00	.170 (.153-.188)	.200 (.170-.220)	.290 (.260-.330)	.400 (.360-.420)	.450 (.420-.480)	801
	01-02	.159 (.147-.172)	.180 (.170-.200)	.270 (.250-.290)	.360 (.330-.390)	.430 (.390-.460)	1114
	03-04	.146 (.135-.158)	.160 (.150-.170)	.260 (.240-.280)	.360 (.330-.380)	.410 (.380-.460)	1074
	05-06	.150 (.140-.160)	.170 (.160-.180)	.260 (.240-.270)	.350 (.320-.380)	.420 (.390-.450)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.02, 0.02, 0.02, and 0.015 respectively.

Urinary Thallium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.166 (.159-.173)	.168 (.162-.176)	.224 (.217-.233)	.297 (.273-.319)	.366 (.338-.387)	2413
	01-02	.156 (.151-.162)	.156 (.148-.164)	.215 (.208-.222)	.287 (.278-.300)	.349 (.337-.365)	2652
	03-04	.154 (.149-.158)	.153 (.146-.160)	.214 (.203-.222)	.286 (.274-.304)	.350 (.328-.369)	2558
	05-06	.155 (.149-.162)	.150 (.140-.160)	.210 (.200-.220)	.300 (.290-.320)	.370 (.350-.390)	2576
Age group							
6-11 years	99-00	.221 (.197-.248)	.222 (.196-.236)	.297 (.229-.356)	.375 (.318-.469)	.424 (.356-.600)	336
	01-02	.211 (.198-.226)	.207 (.198-.221)	.286 (.260-.321)	.370 (.333-.402)	.412 (.389-.456)	362
	03-04	.223 (.208-.238)	.216 (.198-.229)	.306 (.280-.346)	.412 (.346-.458)	.458 (.400-.532)	290
	05-06	.215 (.200-.231)	.210 (.190-.250)	.310 (.270-.320)	.360 (.320-.410)	.430 (.360-.510)	355
12-19 years	99-00	.153 (.146-.160)	.154 (.146-.162)	.205 (.191-.219)	.258 (.231-.278)	.321 (.265-.364)	697
	01-02	.143 (.137-.150)	.145 (.135-.152)	.196 (.184-.207)	.272 (.250-.289)	.312 (.299-.333)	746
	03-04	.143 (.135-.152)	.146 (.131-.155)	.194 (.179-.208)	.254 (.234-.280)	.304 (.271-.327)	725
	05-06	.140 (.133-.147)	.140 (.130-.150)	.190 (.170-.200)	.240 (.220-.270)	.290 (.250-.310)	701
20 years and older	99-00	.162 (.153-.171)	.167 (.155-.176)	.218 (.207-.230)	.286 (.271-.300)	.364 (.325-.389)	1380
	01-02	.153 (.147-.159)	.153 (.144-.161)	.210 (.200-.217)	.278 (.263-.293)	.343 (.313-.362)	1544
	03-04	.148 (.144-.153)	.149 (.141-.156)	.206 (.192-.215)	.273 (.258-.289)	.333 (.306-.353)	1543
	05-06	.152 (.145-.159)	.150 (.140-.160)	.210 (.200-.210)	.290 (.270-.310)	.370 (.350-.400)	1520
Gender							
Males	99-00	.154 (.147-.161)	.156 (.149-.164)	.202 (.192-.214)	.269 (.254-.297)	.338 (.300-.364)	1200
	01-02	.146 (.140-.153)	.148 (.142-.157)	.192 (.184-.204)	.260 (.246-.278)	.307 (.291-.342)	1312
	03-04	.140 (.135-.146)	.142 (.134-.149)	.188 (.180-.198)	.264 (.235-.286)	.317 (.287-.350)	1281
	05-06	.140 (.134-.147)	.140 (.130-.140)	.190 (.180-.200)	.270 (.240-.300)	.320 (.300-.340)	1271
Females	99-00	.178 (.167-.189)	.182 (.169-.197)	.244 (.226-.259)	.317 (.281-.366)	.380 (.333-.462)	1213
	01-02	.167 (.158-.176)	.167 (.153-.180)	.233 (.217-.250)	.313 (.282-.348)	.378 (.348-.402)	1340
	03-04	.167 (.162-.173)	.166 (.157-.177)	.235 (.222-.243)	.313 (.286-.333)	.368 (.340-.412)	1277
	05-06	.171 (.162-.181)	.170 (.160-.180)	.230 (.220-.250)	.330 (.300-.360)	.430 (.370-.490)	1305
Race/ethnicity							
Mexican Americans	99-00	.158 (.147-.170)	.160 (.148-.176)	.213 (.200-.237)	.282 (.266-.304)	.343 (.306-.389)	861
	01-02	.156 (.145-.169)	.155 (.145-.167)	.204 (.191-.221)	.286 (.250-.317)	.361 (.301-.424)	674
	03-04	.159 (.148-.170)	.157 (.143-.172)	.211 (.187-.241)	.293 (.273-.324)	.369 (.326-.422)	618
	05-06	.149 (.139-.158)	.150 (.140-.160)	.200 (.180-.210)	.270 (.240-.290)	.320 (.280-.370)	652
Non-Hispanic blacks	99-00	.142 (.133-.152)	.140 (.129-.151)	.200 (.184-.214)	.278 (.244-.307)	.383 (.286-.462)	561
	01-02	.138 (.128-.150)	.136 (.125-.146)	.194 (.170-.212)	.256 (.238-.278)	.328 (.271-.387)	657
	03-04	.133 (.122-.145)	.128 (.119-.143)	.185 (.171-.200)	.255 (.237-.269)	.323 (.267-.377)	723
	05-06	.137 (.128-.145)	.130 (.130-.140)	.190 (.180-.200)	.240 (.220-.290)	.320 (.270-.370)	692
Non-Hispanic whites	99-00	.169 (.160-.179)	.173 (.167-.181)	.227 (.215-.240)	.300 (.272-.329)	.364 (.333-.377)	801
	01-02	.161 (.155-.167)	.161 (.153-.171)	.222 (.214-.231)	.292 (.278-.304)	.348 (.330-.383)	1114
	03-04	.154 (.148-.160)	.153 (.143-.162)	.214 (.200-.223)	.283 (.271-.304)	.333 (.313-.363)	1074
	05-06	.156 (.148-.164)	.150 (.140-.160)	.210 (.200-.230)	.300 (.280-.320)	.360 (.330-.400)	1041

Urinary Tungsten

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.093 (.087-.100)	.090 (.080-.090)	.180 (.160-.190)	.320 (.280-.370)	.500 (.430-.550)	2338
	01-02	.082 (.073-.092)	.070 (.060-.090)	.160 (.140-.180)	.300 (.260-.350)	.460 (.370-.560)	2652
	03-04	.071 (.064-.078)	.070 (.060-.080)	.130 (.120-.140)	.270 (.230-.300)	.400 (.330-.480)	2558
	05-06	.085 (.079-.092)	.090 (.080-.090)	.170 (.150-.180)	.310 (.280-.340)	.470 (.400-.520)	2576
Age group							
6-11 years	99-00	.158 (.123-.204)	.160 (.120-.220)	.270 (.220-.350)	.510 (.380-.560)	.620 (.510-.950)	320
	01-02	.137 (.110-.170)	.140 (.110-.170)	.260 (.200-.350)	.460 (.360-.690)	.770 (.510-1.53)	363
	03-04	.130 (.111-.151)	.140 (.120-.150)	.240 (.190-.290)	.410 (.290-.500)	.500 (.370-.630)	290
	05-06	.142 (.121-.166)	.140 (.120-.170)	.230 (.210-.290)	.430 (.330-.610)	.640 (.440-.850)	355
12-19 years	99-00	.113 (.097-.132)	.110 (.090-.130)	.210 (.180-.250)	.360 (.310-.440)	.530 (.380-.800)	679
	01-02	.113 (.095-.135)	.110 (.090-.130)	.210 (.180-.260)	.400 (.310-.520)	.570 (.430-.790)	744
	03-04	.105 (.090-.122)	.100 (.090-.120)	.190 (.160-.230)	.350 (.290-.460)	.530 (.350-1.00)	725
	05-06	.131 (.108-.158)	.130 (.100-.160)	.250 (.200-.310)	.430 (.360-.530)	.620 (.410-1.04)	701
20 years and older	99-00	.084 (.078-.091)	.080 (.070-.090)	.160 (.130-.180)	.280 (.260-.320)	.450 (.360-.520)	1339
	01-02	.073 (.065-.082)	.060 (.050-.070)	.140 (.110-.160)	.260 (.210-.310)	.380 (.310-.490)	1545
	03-04	.062 (.056-.068)	.060 (.050-.070)	.110 (.100-.120)	.210 (.180-.250)	.360 (.270-.430)	1543
	05-06	.075 (.070-.081)	.080 (.070-.080)	.140 (.130-.160)	.250 (.220-.310)	.410 (.340-.470)	1520
Gender							
Males	99-00	.107 (.096-.120)	.100 (.090-.120)	.210 (.190-.230)	.390 (.310-.470)	.530 (.470-.650)	1160
	01-02	.088 (.074-.105)	.080 (.060-.100)	.170 (.140-.220)	.330 (.260-.390)	.490 (.380-.580)	1307
	03-04	.081 (.071-.093)	.080 (.070-.090)	.140 (.130-.170)	.300 (.250-.340)	.430 (.340-.560)	1281
	05-06	.095 (.090-.101)	.090 (.080-.100)	.180 (.160-.190)	.340 (.310-.380)	.480 (.420-.610)	1271
Females	99-00	.082 (.077-.087)	.070 (.060-.080)	.150 (.130-.160)	.270 (.240-.300)	.400 (.320-.470)	1178
	01-02	.076 (.069-.084)	.060 (.060-.080)	.150 (.120-.170)	.280 (.230-.330)	.430 (.340-.560)	1345
	03-04	.062 (.056-.069)	.060 (.050-.070)	.110 (.100-.120)	.220 (.190-.250)	.370 (.270-.460)	1277
	05-06	.077 (.069-.085)	.080 (.070-.090)	.160 (.150-.170)	.280 (.250-.320)	.440 (.350-.510)	1305
Race/ethnicity							
Mexican Americans	99-00	.113 (.095-.133)	.110 (.090-.130)	.200 (.160-.250)	.400 (.300-.520)	.550 (.420-.830)	790
	01-02	.101 (.093-.109)	.100 (.090-.110)	.190 (.170-.210)	.370 (.310-.430)	.570 (.450-.670)	680
	03-04	.086 (.073-.100)	.080 (.070-.100)	.170 (.120-.220)	.360 (.230-.620)	.640 (.410-.800)	618
	05-06	.102 (.088-.118)	.100 (.080-.110)	.200 (.170-.220)	.450 (.310-.650)	.730 (.510-1.04)	652
Non-Hispanic blacks	99-00	.113 (.101-.126)	.100 (.090-.130)	.210 (.180-.250)	.370 (.290-.460)	.560 (.420-.810)	562
	01-02	.096 (.080-.116)	.090 (.070-.120)	.160 (.130-.250)	.310 (.270-.400)	.460 (.400-.590)	649
	03-04	.092 (.082-.104)	.090 (.080-.110)	.160 (.150-.180)	.300 (.250-.330)	.470 (.340-.550)	723
	05-06	.101 (.088-.116)	.110 (.090-.120)	.190 (.160-.220)	.320 (.280-.370)	.450 (.340-.650)	692
Non-Hispanic whites	99-00	.092 (.084-.100)	.080 (.070-.100)	.180 (.160-.200)	.320 (.270-.380)	.470 (.380-.550)	802
	01-02	.076 (.066-.088)	.060 (.050-.080)	.150 (.120-.180)	.290 (.230-.360)	.430 (.330-.620)	1117
	03-04	.065 (.058-.073)	.060 (.060-.070)	.120 (.100-.130)	.230 (.190-.290)	.380 (.320-.410)	1074
	05-06	.082 (.075-.089)	.080 (.080-.090)	.160 (.140-.180)	.300 (.250-.340)	.430 (.380-.480)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.04, 0.04, 0.04, and 0.021 respectively.

Urinary Tungsten (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.087 (.080-.095)	.080 (.075-.086)	.146 (.136-.158)	.270 (.206-.333)	.383 (.302-.459)	2338
	01-02	.078 (.069-.087)	.074 (.064-.084)	.138 (.122-.154)	.255 (.216-.300)	.359 (.315-.436)	2651
	03-04	.070 (.063-.078)	.065 (.059-.074)	.117 (.107-.133)	.215 (.179-.253)	.333 (.255-.439)	2558
	05-06	.084 (.080-.089)	.080 (.080-.080)	.140 (.130-.150)	.250 (.210-.290)	.350 (.290-.440)	2576
Age group							
6-11 years	99-00	.174 (.150-.201)	.169 (.136-.198)	.293 (.216-.333)	.439 (.331-.667)	.667 (.452-.880)	320
	01-02	.168 (.144-.197)	.158 (.139-.190)	.275 (.231-.326)	.412 (.333-.554)	.634 (.436-1.28)	363
	03-04	.151 (.131-.174)	.144 (.119-.167)	.250 (.205-.283)	.333 (.278-.484)	.484 (.333-.739)	290
	05-06	.175 (.152-.202)	.160 (.140-.180)	.270 (.220-.320)	.560 (.330-.790)	.790 (.470-1.18)	355
12-19 years	99-00	.084 (.078-.091)	.079 (.074-.084)	.138 (.124-.158)	.231 (.180-.287)	.339 (.237-.465)	679
	01-02	.081 (.071-.092)	.081 (.072-.091)	.148 (.122-.167)	.250 (.208-.301)	.359 (.272-.431)	744
	03-04	.075 (.065-.086)	.071 (.061-.082)	.122 (.098-.148)	.197 (.167-.308)	.379 (.197-.582)	725
	05-06	.101 (.086-.117)	.100 (.080-.110)	.170 (.140-.200)	.300 (.200-.370)	.370 (.300-.770)	701
20 years and older	99-00	.080 (.072-.089)	.075 (.067-.082)	.130 (.116-.146)	.218 (.179-.301)	.347 (.245-.426)	1339
	01-02	.070 (.063-.079)	.067 (.058-.075)	.119 (.099-.139)	.216 (.176-.267)	.333 (.253-.431)	1544
	03-04	.063 (.057-.071)	.059 (.053-.065)	.105 (.094-.117)	.181 (.155-.215)	.279 (.217-.370)	1543
	05-06	.075 (.071-.079)	.070 (.070-.080)	.120 (.110-.130)	.210 (.200-.220)	.290 (.240-.360)	1520
Gender							
Males	99-00	.083 (.074-.094)	.073 (.063-.086)	.146 (.126-.165)	.279 (.198-.386)	.439 (.329-.605)	1160
	01-02	.071 (.060-.083)	.065 (.056-.077)	.125 (.098-.153)	.255 (.203-.306)	.364 (.300-.431)	1306
	03-04	.068 (.059-.079)	.062 (.054-.071)	.111 (.098-.133)	.216 (.170-.284)	.341 (.240-.500)	1281
	05-06	.078 (.073-.083)	.070 (.070-.080)	.130 (.120-.150)	.240 (.200-.300)	.360 (.300-.440)	1271
Females	99-00	.091 (.085-.098)	.084 (.080-.091)	.145 (.136-.158)	.265 (.200-.301)	.339 (.300-.381)	1178
	01-02	.085 (.077-.094)	.083 (.075-.091)	.143 (.130-.161)	.258 (.216-.317)	.353 (.317-.538)	1345
	03-04	.072 (.065-.079)	.069 (.063-.078)	.121 (.108-.138)	.211 (.176-.237)	.333 (.261-.439)	1277
	05-06	.090 (.085-.096)	.080 (.080-.090)	.150 (.140-.160)	.250 (.210-.290)	.350 (.260-.530)	1305
Race/ethnicity							
Mexican Americans	99-00	.106 (.093-.120)	.100 (.086-.116)	.184 (.152-.214)	.329 (.267-.392)	.497 (.354-.727)	790
	01-02	.098 (.090-.108)	.089 (.081-.100)	.164 (.143-.187)	.294 (.258-.375)	.555 (.410-.797)	679
	03-04	.079 (.065-.096)	.073 (.054-.093)	.136 (.103-.197)	.300 (.233-.426)	.482 (.344-.823)	618
	05-06	.096 (.083-.111)	.090 (.080-.090)	.160 (.150-.180)	.330 (.250-.420)	.670 (.360-.890)	652
Non-Hispanic blacks	99-00	.073 (.064-.083)	.071 (.061-.081)	.124 (.109-.154)	.201 (.188-.222)	.360 (.217-.465)	562
	01-02	.066 (.056-.077)	.060 (.049-.079)	.109 (.090-.125)	.199 (.153-.285)	.340 (.250-.414)	649
	03-04	.066 (.059-.074)	.067 (.055-.075)	.105 (.095-.120)	.186 (.150-.224)	.317 (.214-.358)	723
	05-06	.073 (.065-.082)	.070 (.060-.080)	.120 (.110-.140)	.210 (.190-.260)	.320 (.260-.390)	692
Non-Hispanic whites	99-00	.091 (.083-.100)	.082 (.077-.088)	.150 (.136-.169)	.279 (.200-.354)	.385 (.302-.462)	802
	01-02	.078 (.068-.088)	.073 (.061-.085)	.139 (.121-.157)	.253 (.209-.308)	.353 (.286-.453)	1117
	03-04	.069 (.060-.078)	.063 (.057-.071)	.116 (.104-.133)	.199 (.167-.237)	.299 (.222-.439)	1074
	05-06	.085 (.080-.090)	.080 (.080-.090)	.140 (.130-.160)	.240 (.210-.280)	.340 (.280-.420)	1041

Urinary Uranium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.008 (.007-.009)	.007 (.006-.008)	.013 (.010-.017)	.027 (.021-.038)	.046 (.037-.056)	2464
	01-02	.009 (.007-.010)	.008 (.007-.009)	.014 (.012-.018)	.030 (.023-.039)	.046 (.034-.062)	2690
	03-04	.008 (.007-.008)	.007 (.006-.007)	.011 (.010-.013)	.021 (.017-.026)	.031 (.026-.037)	2557
	05-06	.006 (.005-.006)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.020-.020)	.030 (.020-.040)	2576
Age group							
6-11 years	99-00	.009 (.007-.011)	.007 (.006-.009)	.013 (.009-.022)	.032 (.019-.048)	.048 (.033-.066)	340
	01-02	.008 (.007-.010)	.008 (.006-.010)	.014 (.010-.020)	.026 (.020-.036)	.040 (.025-.049)	368
	03-04	.008 (.007-.009)	.007 (.006-.009)	.012 (.009-.016)	.020 (.016-.026)	.028 (.020-.039)	289
	05-06	.006 (.005-.007)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.010-.030)	.030 (.010-.050)	355
12-19 years	99-00	.009 (.008-.011)	.009 (.008-.010)	.015 (.012-.018)	.026 (.020-.043)	.044 (.028-.072)	719
	01-02	.010 (.008-.012)	.010 (.008-.012)	.017 (.013-.023)	.030 (.022-.042)	.042 (.027-.088)	762
	03-04	.010 (.009-.011)	.009 (.008-.010)	.015 (.012-.018)	.028 (.023-.036)	.038 (.036-.053)	725
	05-06	.007 (.006-.008)	.010 (.010-.010)	.010 (.010-.020)	.020 (.020-.030)	.030 (.030-.040)	701
20 years and older	99-00	.008 (.006-.009)	.007 (.005-.008)	.013 (.010-.017)	.027 (.021-.040)	.046 (.036-.056)	1405
	01-02	.009 (.007-.010)	.008 (.007-.009)	.014 (.012-.017)	.031 (.022-.040)	.046 (.034-.065)	1560
	03-04	*	.006 (.005-.007)	.011 (.009-.012)	.019 (.016-.026)	.029 (.024-.038)	1543
	05-06	.005 (.005-.006)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.020-.020)	.030 (.020-.040)	1520
Gender							
Males	99-00	.009 (.008-.011)	.008 (.007-.010)	.015 (.012-.021)	.036 (.024-.046)	.053 (.040-.067)	1227
	01-02	.009 (.008-.011)	.009 (.007-.010)	.015 (.013-.021)	.033 (.024-.045)	.047 (.035-.065)	1335
	03-04	.008 (.007-.009)	.007 (.006-.008)	.013 (.011-.016)	.023 (.019-.027)	.031 (.027-.035)	1280
	05-06	.006 (.006-.007)	.010 (.010-.010)	.010 (.010-.010)	.020 (.020-.020)	.030 (.020-.040)	1271
Females	99-00	.007 (.006-.008)	.006 (.005-.007)	.012 (.009-.015)	.023 (.016-.033)	.036 (.026-.050)	1237
	01-02	.008 (.007-.010)	.008 (.006-.009)	.014 (.011-.017)	.027 (.019-.037)	.041 (.029-.063)	1355
	03-04	*	.006 (.005-.007)	.010 (.009-.011)	.018 (.013-.027)	.031 (.022-.039)	1277
	05-06	.005 (.005-.006)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.020-.020)	.030 (.030-.040)	1305
Race/ethnicity							
Mexican Americans	99-00	.017 (.012-.023)	.016 (.011-.021)	.033 (.020-.054)	.060 (.040-.127)	.114 (.054-.279)	883
	01-02	.013 (.010-.016)	.012 (.009-.016)	.022 (.017-.030)	.040 (.031-.054)	.055 (.046-.069)	683
	03-04	.014 (.011-.017)	.013 (.009-.018)	.024 (.017-.034)	.041 (.028-.073)	.064 (.039-.158)	618
	05-06	.008 (.007-.009)	.010 (.010-.010)	.010 (.010-.020)	.030 (.020-.030)	.040 (.030-.050)	652
Non-Hispanic blacks	99-00	.009 (.007-.011)	.008 (.006-.010)	.014 (.010-.020)	.028 (.018-.049)	.052 (.030-.067)	568
	01-02	.008 (.007-.009)	.008 (.007-.009)	.012 (.011-.015)	.021 (.017-.027)	.030 (.023-.037)	667
	03-04	.008 (.008-.009)	.007 (.007-.008)	.012 (.011-.013)	.021 (.017-.027)	.031 (.023-.045)	722
	05-06	.006 (.005-.007)	.010 (.010-.010)	.010 (.010-.010)	.020 (.010-.020)	.020 (.020-.030)	692
Non-Hispanic whites	99-00	.007 (.006-.009)	.007 (.006-.007)	.012 (.009-.016)	.023 (.017-.037)	.043 (.027-.051)	822
	01-02	.008 (.007-.009)	.007 (.006-.009)	.013 (.011-.016)	.026 (.019-.035)	.037 (.029-.050)	1132
	03-04	*	.006 (.005-.007)	.010 (.009-.012)	.018 (.015-.023)	.027 (.020-.036)	1074
	05-06	.005 (.005-.006)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.010-.020)	.030 (.020-.040)	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.004, 0.004, 0.005, and 0.002 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Uranium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	.007 (.006-.009)	.007 (.006-.009)	.013 (.010-.016)	.024 (.019-.030)	.034 (.027-.053)	2464
	01-02	.008 (.007-.010)	.007 (.006-.009)	.014 (.011-.018)	.026 (.020-.034)	.040 (.028-.058)	2689
	03-04	.008 (.007-.008)	.007 (.006-.008)	.012 (.010-.014)	.021 (.017-.025)	.029 (.023-.039)	2557
	05-06	.006 (.005-.006)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.010-.020)	.030 (.020-.040)	2576
Age group							
6-11 years	99-00	.009 (.007-.012)	.008 (.006-.011)	.015 (.010-.024)	.030 (.016-.044)	.037 (.030-.077)	340
	01-02	.010 (.008-.011)	.010 (.008-.012)	.015 (.013-.019)	.027 (.018-.032)	.033 (.027-.048)	368
	03-04	.009 (.008-.010)	.008 (.007-.010)	.013 (.011-.017)	.024 (.016-.039)	.033 (.022-.050)	289
	05-06	.007 (.006-.008)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.010-.040)	.030 (.020-.050)	355
12-19 years	99-00	.007 (.006-.008)	.006 (.005-.008)	.010 (.009-.014)	.020 (.014-.030)	.030 (.019-.074)	719
	01-02	.007 (.006-.008)	.007 (.006-.008)	.012 (.009-.016)	.020 (.015-.026)	.026 (.020-.042)	762
	03-04	.007 (.006-.008)	.006 (.005-.007)	.010 (.008-.013)	.019 (.015-.027)	.034 (.022-.041)	725
	05-06	.006 (.005-.006)	.010 (.00-.010)	.010 (.010-.010)	.020 (.010-.020)	.020 (.020-.030)	701
20 years and older	99-00	.007 (.006-.009)	.007 (.006-.009)	.013 (.010-.016)	.024 (.019-.029)	.034 (.025-.051)	1405
	01-02	.008 (.007-.010)	.007 (.006-.009)	.014 (.011-.019)	.027 (.020-.039)	.043 (.030-.063)	1559
	03-04	*	.007 (.006-.008)	.012 (.010-.014)	.020 (.017-.024)	.028 (.022-.038)	1543
	05-06	.005 (.005-.006)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.010-.020)	.030 (.020-.040)	1520
Gender							
Males	99-00	.007 (.006-.009)	.006 (.005-.008)	.011 (.009-.015)	.021 (.017-.028)	.035 (.024-.056)	1227
	01-02	.007 (.006-.008)	.007 (.006-.008)	.012 (.010-.015)	.022 (.018-.028)	.033 (.025-.047)	1334
	03-04	.007 (.006-.008)	.006 (.006-.007)	.010 (.009-.012)	.019 (.015-.024)	.026 (.019-.039)	1280
	05-06	.005 (.005-.005)	†.000 (.000-.010)	.010 (.010-.010)	.010 (.010-.020)	.020 (.020-.030)	1271
Females	99-00	.008 (.007-.010)	.007 (.006-.010)	.013 (.010-.017)	.025 (.019-.033)	.034 (.027-.054)	1237
	01-02	.009 (.008-.011)	.009 (.007-.011)	.016 (.012-.021)	.029 (.021-.042)	.045 (.031-.067)	1355
	03-04	*	.008 (.007-.009)	.013 (.011-.016)	.022 (.018-.028)	.031 (.025-.041)	1277
	05-06	.006 (.006-.007)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.020-.020)	.030 (.020-.040)	1305
Race/ethnicity							
Mexican Americans	99-00	.015 (.011-.022)	.015 (.011-.020)	.029 (.016-.058)	.059 (.027-.146)	.100 (.042-.270)	883
	01-02	.012 (.010-.016)	.012 (.009-.016)	.021 (.015-.028)	.033 (.024-.053)	.050 (.034-.080)	682
	03-04	.013 (.010-.016)	.013 (.009-.017)	.022 (.016-.029)	.035 (.026-.051)	.051 (.034-.061)	618
	05-06	.008 (.006-.009)	.010 (.010-.010)	.010 (.010-.020)	.020 (.020-.030)	.030 (.030-.060)	652
Non-Hispanic blacks	99-00	.006 (.004-.007)	.005 (.004-.006)	.008 (.006-.013)	.017 (.011-.029)	.028 (.018-.048)	568
	01-02	.005 (.005-.006)	.005 (.005-.006)	.008 (.007-.010)	.013 (.011-.014)	.017 (.014-.029)	667
	03-04	.006 (.005-.006)	.005 (.005-.006)	.009 (.008-.009)	.013 (.012-.015)	.018 (.014-.024)	722
	05-06	.004 (.004-.005)	†.000 (.000-.000)	.010 (.010-.010)	.010 (.010-.020)	.020 (.010-.020)	692
Non-Hispanic whites	99-00	.007 (.006-.009)	.007 (.006-.009)	.012 (.010-.015)	.021 (.017-.027)	.030 (.024-.050)	822
	01-02	.008 (.007-.009)	.007 (.006-.009)	.013 (.011-.016)	.025 (.018-.032)	.034 (.025-.051)	1132
	03-04	*	.007 (.006-.008)	.011 (.010-.013)	.019 (.015-.024)	.027 (.020-.040)	1074
	05-06	.006 (.005-.006)	.010 (<LOD-.010)	.010 (.010-.010)	.020 (.010-.020)	.020 (.020-.040)	1041

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

† The creatinine corrected values were calculated to be <0.0001, and were rounded as shown.

Paraben Chemical Information

Urinary Butyl paraben

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	*	< LOD	1.30 (.800-1.80)	6.60 (4.80-10.7)	19.6 (16.4-26.7)	2548
Age group							
6-11 years	05-06	*	< LOD	.400 (.200-600)	1.90 (.800-5.80)	7.50 (1.70-18.5)	356
12-19 years	05-06	*	.200 (<LOD-.400)	.900 (.600-1.80)	9.60 (4.10-16.1)	24.6 (14.5-33.4)	702
20 years and older	05-06	*	< LOD	1.70 (1.00-2.20)	6.80 (4.80-11.7)	20.5 (15.8-28.3)	1490
Gender							
Males	05-06	*	< LOD	.300 (<LOD-.300)	1.10 (.600-2.00)	3.20 (1.90-5.50)	1270
Females	05-06	.904 (.760-1.07)	.500 (.400-.700)	3.70 (2.90-4.80)	17.4 (11.7-20.8)	34.9 (28.2-41.1)	1278
Race/ethnicity							
Mexican Americans	05-06	*	.200 (<LOD-.300)	1.10 (.700-2.30)	11.3 (6.40-15.6)	27.3 (16.5-35.9)	637
Non-Hispanic blacks	05-06	*	.300 (.200-.400)	2.10 (1.00-3.50)	9.10 (4.40-25.0)	31.8 (10.1-82.6)	678
Non-Hispanic whites	05-06	*	< LOD	1.00 (.700-1.80)	5.80 (4.00-9.00)	17.7 (11.7-25.9)	1038

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.2.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Butyl paraben (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	*	< LOD	1.16 (.910-1.62)	7.82 (6.26-11.2)	21.2 (16.8-27.3)	2548
Age group							
6-11 years	05-06	*	< LOD	.440 (.370-.660)	1.65 (1.00-5.29)	7.92 (1.64-30.5)	356
12-19 years	05-06	*	.190 (<LOD-.250)	.690 (.490-1.20)	6.67 (3.60-11.2)	18.7 (9.52-28.9)	702
20 years and older	05-06	*	< LOD	1.49 (1.06-1.96)	9.07 (6.55-14.8)	25.5 (17.9-30.4)	1490
Gender							
Males	05-06	*	< LOD	.290 (<LOD-.350)	.830 (.570-1.16)	2.28 (1.43-2.91)	1270
Females	05-06	1.06 (.914-1.24)	.750 (.600-.860)	4.44 (3.01-6.26)	19.8 (13.5-25.7)	34.7 (26.9-42.7)	1278
Race/ethnicity							
Mexican Americans	05-06	*	.240 (<LOD-.290)	1.20 (.760-1.68)	9.15 (5.36-15.2)	20.3 (15.8-29.2)	637
Non-Hispanic blacks	05-06	*	.220 (.180-.270)	1.46 (.750-2.64)	8.18 (3.65-17.9)	21.0 (10.9-51.3)	678
Non-Hispanic whites	05-06	*	< LOD	1.12 (.850-1.65)	6.93 (5.21-9.91)	20.9 (15.4-27.3)	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Paraben Chemical Information

Urinary Ethyl paraben

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	*	< LOD	4.80 (3.40-6.00)	26.2 (19.4-31.9)	57.2 (40.3-83.4)	2548
Age group							
6-11 years	05-06	*	< LOD	< LOD	2.60 (1.70-4.70)	9.90 (2.80-30.7)	356
12-19 years	05-06	*	< LOD	2.30 (1.30-3.20)	11.3 (7.90-24.1)	38.0 (17.7-122)	702
20 years and older	05-06	*	< LOD	5.90 (4.60-8.10)	30.4 (22.3-38.6)	69.5 (48.1-89.5)	1490
Gender							
Males	05-06	*	< LOD	1.90 (1.20-3.00)	8.90 (5.80-13.7)	25.2 (15.7-29.2)	1270
Females	05-06	*	1.30 (<LOD-2.20)	10.0 (7.50-13.2)	42.7 (32.3-62.8)	98.7 (74.7-147)	1278
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	3.70 (1.90-6.10)	24.0 (11.6-37.7)	55.6 (40.3-120)	637
Non-Hispanic blacks	05-06	*	1.00 (<LOD-1.50)	5.70 (3.70-9.80)	31.3 (20.4-52.1)	92.3 (41.5-166)	678
Non-Hispanic whites	05-06	*	< LOD	4.80 (3.10-6.10)	24.0 (15.5-32.3)	54.7 (36.4-86.8)	1038

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 1.0.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Ethyl paraben (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	*	< LOD	4.61 (3.39-6.30)	27.1 (19.1-34.0)	66.5 (46.5-84.2)	2548
Age group							
6-11 years	05-06	*	< LOD	< LOD	4.18 (1.91-10.2)	13.5 (4.18-29.0)	356
12-19 years	05-06	*	< LOD	1.94 (1.29-2.65)	10.9 (3.57-20.2)	32.0 (14.1-57.8)	702
20 years and older	05-06	*	< LOD	6.36 (4.63-7.92)	32.4 (23.7-46.0)	76.8 (57.3-97.9)	1490
Gender							
Males	05-06	*	< LOD	1.82 (1.48-2.15)	6.38 (3.55-9.95)	15.5 (10.2-22.3)	1270
Females	05-06	*	2.09 (<LOD-2.60)	12.7 (8.45-16.2)	57.3 (40.7-75.2)	107 (82.9-141)	1278
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	3.49 (2.09-5.23)	23.6 (11.8-33.2)	68.5 (32.1-107)	637
Non-Hispanic blacks	05-06	*	.970 (<LOD-1.14)	4.48 (2.90-6.07)	22.0 (14.1-36.8)	47.5 (33.7-106)	678
Non-Hispanic whites	05-06	*	< LOD	4.73 (3.38-6.58)	27.5 (16.2-38.4)	70.6 (46.0-91.2)	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Paraben Chemical Information

Urinary Methyl paraben

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	56.4 (46.9-67.9)	63.5 (47.9-74.5)	216 (168-282)	560 (432-777)	974 (827-1110)	2548
Age group							
6-11 years	05-06	33.5 (25.6-43.8)	25.0 (19.4-35.3)	86.7 (61.5-153)	289 (238-868)	1560 (389-2090)	356
12-19 years	05-06	53.8 (43.9-66.0)	53.5 (39.4-65.7)	192 (163-264)	491 (380-720)	901 (571-1210)	702
20 years and older	05-06	60.3 (48.7-74.7)	70.0 (57.1-85.3)	225 (177-322)	602 (439-814)	974 (827-1110)	1490
Gender							
Males	05-06	29.8 (24.8-35.8)	23.7 (19.5-29.4)	97.6 (78.1-121)	299 (229-355)	491 (385-743)	1270
Females	05-06	104 (80.8-135)	137 (93.0-168)	356 (279-427)	842 (660-974)	1110 (956-1330)	1278
Race/ethnicity							
Mexican Americans	05-06	78.2 (61.0-100)	86.3 (64.7-121)	301 (233-349)	742 (474-896)	1100 (896-1170)	637
Non-Hispanic blacks	05-06	174 (133-229)	216 (150-306)	616 (465-789)	1180 (1010-1480)	1690 (1210-2880)	678
Non-Hispanic whites	05-06	43.8 (36.7-52.3)	44.3 (36.7-58.2)	165 (132-209)	412 (320-520)	806 (485-974)	1038

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 1.0.

Urinary Methyl paraben (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	55.0 (46.8-64.6)	58.8 (47.0-73.4)	221 (170-264)	527 (426-685)	902 (753-995)	2548
Age group							
6-11 years	05-06	36.8 (27.9-48.7)	26.9 (21.0-36.6)	108 (55.9-164)	259 (195-753)	1540 (313-2510)	356
12-19 years	05-06	40.1 (33.7-47.8)	41.7 (31.5-56.3)	160 (129-178)	362 (280-428)	549 (434-656)	702
20 years and older	05-06	60.5 (50.5-72.5)	69.6 (51.5-90.9)	251 (189-320)	602 (462-729)	930 (788-1010)	1490
Gender							
Males	05-06	23.9 (20.6-27.8)	21.1 (17.4-25.3)	72.1 (58.0-89.5)	209 (160-260)	368 (262-498)	1270
Females	05-06	123 (99.3-152)	147 (111-196)	377 (319-445)	788 (676-910)	1050 (937-1290)	1278
Race/ethnicity							
Mexican Americans	05-06	70.3 (57.1-86.7)	85.8 (67.2-106)	249 (191-303)	515 (431-656)	870 (656-1080)	637
Non-Hispanic blacks	05-06	122 (93.0-161)	161 (98.2-225)	377 (334-462)	792 (581-1100)	1220 (916-1590)	678
Non-Hispanic whites	05-06	46.1 (39.0-54.4)	45.6 (34.5-59.7)	170 (142-234)	447 (339-706)	814 (640-995)	1038

Paraben Chemical Information

Urinary *n*-Propyl paraben

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	7.91 (6.41-9.77)	8.70 (5.90-12.4)	48.9 (36.6-64.8)	160 (129-200)	299 (237-354)	2548
Age group							
6-11 years	05-06	3.41 (2.43-4.77)	2.50 (1.60-4.30)	11.1 (7.10-21.0)	47.5 (30.0-91.9)	125 (55.8-383)	356
12-19 years	05-06	8.16 (5.70-11.7)	8.40 (5.00-13.9)	46.4 (24.1-68.5)	165 (96.7-222)	310 (201-361)	702
20 years and older	05-06	8.67 (6.83-11.0)	11.2 (7.70-14.4)	55.6 (41.2-75.6)	172 (130-233)	302 (237-367)	1490
Gender							
Males	05-06	2.96 (2.33-3.77)	2.30 (1.60-3.10)	13.8 (9.00-18.0)	51.7 (39.7-70.9)	125 (77.2-185)	1270
Females	05-06	20.4 (16.0-25.9)	29.1 (21.6-37.5)	93.0 (75.7-129)	254 (193-318)	357 (318-395)	1278
Race/ethnicity							
Mexican Americans	05-06	10.6 (8.08-13.8)	12.1 (7.00-17.5)	65.9 (43.5-93.3)	247 (174-293)	389 (293-453)	637
Non-Hispanic blacks	05-06	26.8 (21.5-33.3)	34.7 (28.3-44.2)	125 (89.5-165)	331 (236-411)	531 (367-730)	678
Non-Hispanic whites	05-06	6.21 (5.02-7.68)	6.00 (4.60-9.10)	35.7 (28.4-49.6)	130 (92.1-157)	229 (156-318)	1038

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.2.

Urinary *n*-Propyl paraben (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	7.71 (6.40-9.30)	8.27 (5.87-11.3)	52.9 (41.6-66.1)	161 (140-178)	263 (226-288)	2548
Age group							
6-11 years	05-06	3.75 (2.67-5.26)	2.70 (1.89-4.43)	11.5 (8.07-16.0)	52.1 (22.9-100)	121 (55.5-352)	356
12-19 years	05-06	6.08 (4.36-8.49)	5.44 (3.03-10.5)	33.0 (20.7-48.7)	116 (81.9-161)	175 (140-239)	702
20 years and older	05-06	8.70 (7.08-10.7)	10.8 (7.39-15.2)	63.2 (49.7-80.5)	178 (152-198)	270 (236-293)	1490
Gender							
Males	05-06	2.38 (1.92-2.95)	1.84 (1.42-2.46)	9.52 (6.79-12.8)	40.5 (31.1-51.5)	90.8 (56.8-125)	1270
Females	05-06	23.9 (19.9-28.8)	34.9 (26.9-46.6)	114 (101-132)	235 (193-263)	306 (277-342)	1278
Race/ethnicity							
Mexican Americans	05-06	9.49 (7.29-12.4)	11.0 (6.69-16.4)	55.2 (44.9-79.6)	186 (147-271)	329 (194-441)	637
Non-Hispanic blacks	05-06	18.8 (15.2-23.3)	23.6 (19.0-30.8)	83.7 (61.8-105)	217 (169-255)	318 (242-377)	678
Non-Hispanic whites	05-06	6.53 (5.32-8.02)	6.45 (3.96-9.11)	47.4 (32.6-65.3)	146 (119-184)	241 (184-278)	1038

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Serum Perfluorobutane sulfonic acid (PFBuS)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2094
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-200)	2120
Age group							
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	640
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-100)	640
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1454
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-200)	1480
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1053
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-200)	1048
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1041
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-200)	1072
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	485
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-200)	499
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	538
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-100)	544
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	962
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-400)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.4 and 0.1.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Serum Perfluorodecanoic acid (PFDeA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	.300 (<LOD-.500)	.600 (.400-1.10)	.900 (.500-1.80)	2094
	05-06	.355 (.297-.423)	.300 (.300-.400)	.500 (.400-.700)	.900 (.600-1.60)	1.50 (.900-2.60)	2120
Age group							
12-19 years	03-04	*	< LOD	< LOD	.500 (<LOD-1.00)	.800 (.300-1.20)	640
	05-06	.295 (.258-.338)	.300 (.200-.300)	.500 (.400-.500)	.600 (.500-.800)	.800 (.600-1.60)	640
20 years and older	03-04	*	< LOD	.400 (<LOD-.500)	.700 (.400-1.00)	.900 (.500-1.80)	1454
	05-06	.364 (.303-.438)	.300 (.300-.400)	.500 (.400-.700)	1.00 (.600-1.70)	1.50 (.900-2.60)	1480
Gender							
Males	03-04	*	< LOD	.400 (<LOD-.500)	.800 (.400-1.40)	1.10 (.600-2.10)	1053
	05-06	.381 (.318-.456)	.400 (.300-.400)	.600 (.400-.800)	1.00 (.600-2.20)	1.70 (1.00-2.60)	1048
Females	03-04	*	< LOD	.300 (<LOD-.400)	.500 (.400-.800)	.800 (.500-1.20)	1041
	05-06	.331 (.277-.396)	.300 (.300-.400)	.500 (.400-.600)	.900 (.600-1.40)	1.30 (.800-2.30)	1072
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	.500 (.400-.500)	.600 (.500-800)	485
	05-06	.283 (.245-.327)	.300 (.200-.300)	.400 (.300-.500)	.600 (.500-1.00)	1.00 (.500-2.40)	499
Non-Hispanic blacks	03-04	*	< LOD	.400 (<LOD-.700)	.800 (.400-1.50)	1.00 (.500-3.10)	538
	05-06	.405 (.309-.531)	.400 (.300-.500)	.600 (.400-.900)	1.20 (.600-2.90)	2.30 (1.10-3.70)	544
Non-Hispanic whites	03-04	*	< LOD	.300 (<LOD-.500)	.600 (.400-1.00)	.900 (.500-1.80)	962
	05-06	.350 (.294-.417)	.300 (.300-.400)	.500 (.400-.700)	.900 (.600-1.50)	1.40 (.800-2.30)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.3 and 0.2.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Serum Perfluorododecanoic acid (PFDoA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2094
	05-06	*	< LOD	< LOD	< LOD	< LOD	2120
Age group							
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	640
	05-06	*	< LOD	< LOD	< LOD	< LOD	640
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1454
	05-06	*	< LOD	< LOD	< LOD	< LOD	1480
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1053
	05-06	*	< LOD	< LOD	< LOD	< LOD	1048
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1041
	05-06	*	< LOD	< LOD	< LOD	< LOD	1072
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	485
	05-06	*	< LOD	< LOD	< LOD	< LOD	499
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	538
	05-06	*	< LOD	< LOD	< LOD	< LOD	544
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	962
	05-06	*	< LOD	< LOD	< LOD	< LOD	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 1.0 and 0.2.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Serum Perfluoroheptanoic acid (PFHpA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	.400 (<LOD-.500)	2094
	05-06	*	< LOD	< LOD	< LOD	.700 (<LOD-1.70)	2120
Age group							
12-19 years	03-04	*	< LOD	< LOD	.400 (<LOD-.600)	.600 (.500-900)	640
	05-06	*	< LOD	< LOD	.700 (<LOD-1.10)	1.10 (.600-2.70)	640
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1454
	05-06	*	< LOD	< LOD	< LOD	.600 (<LOD-2.10)	1480
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	.300 (<LOD-400)	1053
	05-06	*	< LOD	< LOD	.400 (<LOD-1.00)	.800 (<LOD-2.10)	1048
Females	03-04	*	< LOD	< LOD	< LOD	.400 (.300-600)	1041
	05-06	*	< LOD	< LOD	< LOD	.600 (<LOD-1.30)	1072
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	.500 (<LOD-.900)	485
	05-06	*	< LOD	< LOD	< LOD	.500 (<LOD-1.50)	499
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	538
	05-06	*	< LOD	< LOD	< LOD	.500 (<LOD-1.80)	544
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	.300 (<LOD-500)	962
	05-06	*	< LOD	< LOD	< LOD	.800 (<LOD-2.10)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.3 and 0.4.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Serum Perfluorohexane sulfonic acid (PFHxS)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric	Selected percentiles (95% confidence interval)				Sample size
		mean (95% conf. interval)	50th	75th	90th	95th	
Total	03-04	1.93 (1.73-2.16)	1.90 (1.70-2.10)	3.30 (2.80-3.90)	5.90 (4.80-7.20)	8.30 (7.10-9.70)	2094
	05-06	1.67 (1.42-1.98)	1.80 (1.50-2.10)	3.20 (2.60-4.00)	5.40 (4.40-7.10)	8.30 (5.80-11.9)	2120
Age group							
12-19 years	03-04	2.44 (2.05-2.90)	2.40 (1.80-3.20)	4.90 (4.00-6.30)	9.50 (6.80-12.5)	13.3 (9.90-19.6)	640
	05-06	2.09 (1.74-2.52)	2.40 (2.00-2.90)	4.30 (3.70-5.40)	9.50 (6.40-13.1)	14.1 (9.80-17.8)	640
20 years and older	03-04	1.86 (1.67-2.08)	1.80 (1.60-2.10)	3.00 (2.60-3.60)	5.50 (4.50-6.70)	7.60 (6.30-9.40)	1454
	05-06	1.62 (1.37-1.92)	1.70 (1.50-2.10)	3.10 (2.50-3.80)	5.20 (4.20-6.50)	7.20 (5.10-11.6)	1480
Gender							
Males	03-04	2.17 (1.87-2.51)	2.10 (1.80-2.40)	3.40 (2.80-4.50)	6.10 (4.60-8.10)	8.50 (6.50-10.5)	1053
	05-06	2.08 (1.76-2.45)	2.20 (1.80-2.70)	3.70 (3.20-4.60)	6.40 (4.80-9.30)	9.50 (6.70-13.7)	1048
Females	03-04	1.72 (1.56-1.91)	1.60 (1.40-1.80)	2.90 (2.50-3.50)	5.80 (4.60-7.10)	8.20 (6.70-10.0)	1041
	05-06	1.37 (1.15-1.63)	1.50 (1.20-1.70)	2.80 (2.20-3.30)	4.60 (3.90-5.80)	6.60 (5.60-9.30)	1072
Race/ethnicity							
Mexican Americans	03-04	1.42 (1.17-1.72)	1.50 (1.20-1.70)	2.30 (1.90-2.90)	4.30 (3.10-5.10)	5.50 (4.00-8.90)	485
	05-06	1.25 (.884-1.76)	1.60 (1.20-2.10)	2.80 (2.50-3.40)	4.30 (3.60-5.20)	6.00 (4.60-7.20)	499
Non-Hispanic blacks	03-04	1.92 (1.62-2.26)	1.90 (1.60-2.20)	3.50 (2.80-4.60)	6.00 (5.00-7.10)	8.30 (6.30-12.0)	538
	05-06	1.53 (1.13-2.07)	1.70 (1.40-2.20)	3.30 (2.50-4.10)	5.40 (3.90-7.50)	7.50 (5.30-11.0)	544
Non-Hispanic whites	03-04	2.01 (1.77-2.27)	1.90 (1.70-2.20)	3.30 (2.80-4.10)	6.10 (4.70-7.80)	8.20 (6.90-10.1)	962
	05-06	1.79 (1.48-2.17)	1.80 (1.50-2.20)	3.30 (2.70-4.30)	5.60 (4.60-8.20)	9.40 (6.10-13.1)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.3 and 0.1.

Serum Perfluororononanoic acid (PFNA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	.966 (.816-1.14)	1.00 (.900-1.10)	1.50 (1.20-1.80)	2.30 (1.60-4.30)	3.20 (1.80-7.70)	2094
	05-06	1.09 (.909-1.29)	1.10 (.900-1.20)	1.70 (1.30-2.10)	2.60 (1.80-4.20)	3.60 (2.50-5.70)	2120
Age group							
12-19 years	03-04	.852 (.697-1.04)	.800 (.700-1.00)	1.20 (1.00-1.60)	1.90 (1.20-3.70)	2.80 (1.30-6.30)	640
	05-06	.929 (.782-1.10)	.900 (.800-1.10)	1.40 (1.10-1.80)	2.00 (1.60-2.70)	2.70 (2.10-3.40)	640
20 years and older	03-04	.984 (.835-1.16)	1.00 (.900-1.10)	1.50 (1.20-1.80)	2.40 (1.60-4.40)	3.40 (1.80-8.40)	1454
	05-06	1.11 (.929-1.33)	1.10 (1.00-1.20)	1.70 (1.30-2.20)	2.60 (1.80-4.40)	3.90 (2.50-5.80)	1480
Gender							
Males	03-04	1.09 (.912-1.30)	1.10 (.900-1.20)	1.60 (1.40-1.90)	2.40 (1.70-5.00)	4.00 (1.80-8.70)	1053
	05-06	1.19 (.993-1.43)	1.20 (1.00-1.30)	1.80 (1.40-2.50)	2.90 (1.80-4.60)	3.90 (2.50-6.70)	1048
Females	03-04	.861 (.721-1.03)	.900 (.800-1.00)	1.30 (1.00-1.70)	2.20 (1.40-3.40)	3.00 (1.70-6.10)	1041
	05-06	.992 (.833-1.18)	.900 (.800-1.10)	1.50 (1.20-1.90)	2.40 (1.70-3.50)	3.10 (2.10-5.70)	1072
Race/ethnicity							
Mexican Americans	03-04	.689 (.586-809)	.700 (.600-900)	1.10 (.900-1.40)	1.60 (1.30-2.00)	2.00 (1.60-2.80)	485
	05-06	.821 (.710-951)	.800 (.700-900)	1.20 (1.10-1.40)	1.60 (1.30-2.30)	2.30 (1.50-3.20)	499
Non-Hispanic blacks	03-04	1.14 (.834-1.54)	1.10 (.900-1.40)	1.70 (1.20-2.90)	3.20 (1.50-6.50)	4.70 (2.10-9.30)	538
	05-06	1.17 (.916-1.50)	1.20 (.900-1.40)	1.60 (1.30-2.50)	2.60 (1.70-5.60)	4.40 (2.40-8.20)	544
Non-Hispanic whites	03-04	.963 (.826-1.12)	.900 (.900-1.10)	1.50 (1.20-1.70)	2.30 (1.60-3.60)	3.00 (1.80-6.20)	962
	05-06	1.10 (.914-1.31)	1.10 (.900-1.20)	1.70 (1.30-2.10)	2.60 (1.80-4.20)	3.50 (2.40-5.70)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.1.

Serum Perfluorooctanoic acid (PFOA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	3.95 (3.65-4.27)	4.10 (3.80-4.40)	5.80 (5.30-6.40)	7.80 (6.70-9.60)	9.80 (7.40-14.1)	2094
	05-06	3.92 (3.48-4.42)	4.20 (3.80-4.50)	6.20 (5.40-7.20)	9.00 (7.40-11.2)	11.3 (8.80-14.5)	2120
Age group							
12-19 years	03-04	3.89 (3.47-4.35)	4.00 (3.50-4.50)	5.40 (4.60-6.10)	7.00 (5.60-9.20)	8.60 (5.90-12.6)	640
	05-06	3.59 (3.26-3.96)	3.80 (3.30-4.20)	5.40 (4.60-5.90)	6.90 (6.30-7.90)	8.40 (7.30-10.1)	640
20 years and older	03-04	3.96 (3.67-4.27)	4.10 (3.90-4.40)	5.90 (5.40-6.50)	7.80 (6.80-9.60)	9.90 (7.60-14.2)	1454
	05-06	3.97 (3.51-4.49)	4.20 (3.80-4.60)	6.40 (5.40-7.50)	9.30 (7.40-11.9)	11.6 (9.00-14.8)	1480
Gender							
Males	03-04	4.47 (4.07-4.91)	4.60 (4.30-5.00)	6.30 (5.70-7.20)	8.40 (6.80-12.5)	10.7 (7.40-17.5)	1053
	05-06	4.69 (4.23-5.20)	4.90 (4.40-5.40)	7.20 (6.10-8.00)	9.90 (8.00-12.2)	12.2 (9.60-15.2)	1048
Females	03-04	3.50 (3.21-3.82)	3.60 (3.30-3.90)	5.20 (4.70-5.80)	7.10 (6.30-8.20)	8.60 (7.40-10.6)	1041
	05-06	3.31 (2.89-3.79)	3.50 (3.10-4.00)	5.20 (4.40-6.00)	7.90 (6.10-9.70)	10.1 (7.50-14.2)	1072
Race/ethnicity							
Mexican Americans	03-04	3.11 (2.84-3.40)	3.30 (3.10-3.70)	4.50 (4.20-5.20)	6.70 (5.70-7.30)	7.60 (6.70-10.5)	485
	05-06	2.62 (2.33-2.95)	2.80 (2.50-3.30)	4.30 (3.80-4.70)	5.80 (5.30-6.70)	7.40 (5.90-8.10)	499
Non-Hispanic blacks	03-04	3.37 (2.99-3.79)	3.70 (3.20-4.20)	5.20 (4.40-6.30)	7.70 (5.30-11.6)	9.60 (6.50-13.9)	538
	05-06	3.27 (2.61-4.08)	3.70 (3.00-4.20)	5.50 (4.40-6.80)	8.10 (6.00-11.3)	10.4 (7.80-12.3)	544
Non-Hispanic whites	03-04	4.18 (3.85-4.53)	4.30 (3.90-4.70)	6.00 (5.50-6.70)	7.90 (7.20-9.20)	9.90 (7.60-13.3)	962
	05-06	4.27 (3.80-4.81)	4.40 (4.00-5.00)	6.60 (5.60-7.80)	9.60 (7.40-12.2)	11.6 (8.80-14.8)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.1.

Serum Perfluorooctane sulfonic acid (PFOS)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	20.7 (19.2-22.3)	21.2 (19.8-22.4)	30.0 (27.5-33.0)	41.3 (35.6-50.0)	54.6 (44.0-66.5)	2094
	05-06	17.1 (16.0-18.2)	17.5 (16.8-18.6)	27.2 (24.9-29.6)	39.4 (34.9-43.1)	47.5 (42.7-56.8)	2120
Age group							
12-19 years	03-04	19.3 (17.5-21.4)	19.9 (17.8-22.0)	27.1 (23.7-30.2)	36.5 (28.6-45.6)	42.6 (35.1-52.1)	640
	05-06	15.0 (14.3-15.7)	14.9 (13.6-16.6)	22.7 (19.7-24.9)	30.6 (27.8-34.1)	38.5 (33.0-44.6)	640
20 years and older	03-04	20.9 (19.3-22.5)	21.4 (19.8-22.8)	30.4 (28.1-33.0)	42.7 (35.7-53.3)	57.8 (45.7-69.4)	1454
	05-06	17.4 (16.2-18.7)	18.0 (17.1-19.4)	27.8 (25.3-30.8)	40.2 (35.6-44.5)	49.6 (42.8-60.7)	1480
Gender							
Males	03-04	23.2 (21.1-25.6)	23.9 (22.4-25.5)	32.2 (28.8-35.9)	45.3 (35.5-62.7)	62.7 (43.8-81.8)	1053
	05-06	20.5 (19.4-21.8)	21.3 (20.0-22.5)	31.4 (27.9-33.7)	43.3 (38.7-49.7)	54.3 (43.5-80.7)	1048
Females	03-04	18.4 (17.0-20.0)	18.2 (16.9-19.8)	27.4 (23.8-30.2)	39.8 (34.4-42.6)	46.6 (42.3-61.5)	1041
	05-06	14.4 (13.3-15.4)	14.6 (13.5-15.9)	23.3 (21.1-25.3)	34.2 (30.6-37.7)	42.8 (38.0-46.5)	1072
Race/ethnicity							
Mexican Americans	03-04	14.7 (13.0-16.6)	15.9 (13.4-17.9)	21.2 (18.7-23.5)	28.1 (24.1-35.0)	35.5 (28.9-38.5)	485
	05-06	11.2 (10.3-12.2)	11.6 (9.90-13.3)	17.2 (15.4-19.3)	24.9 (22.0-30.3)	31.9 (26.4-40.6)	499
Non-Hispanic blacks	03-04	21.6 (19.1-24.4)	22.1 (19.6-24.9)	32.3 (28.1-36.2)	43.8 (37.2-57.3)	57.7 (43.8-78.4)	538
	05-06	18.4 (15.6-21.8)	19.0 (16.7-22.3)	27.6 (24.3-35.5)	45.9 (34.4-58.1)	57.9 (45.0-84.4)	544
Non-Hispanic whites	03-04	21.4 (19.9-23.1)	22.0 (20.5-23.0)	30.2 (27.7-33.3)	41.7 (35.7-49.6)	56.3 (44.0-70.0)	962
	05-06	18.1 (17.1-19.1)	18.6 (17.3-19.8)	28.3 (26.1-30.8)	39.7 (35.6-43.3)	46.6 (42.7-54.3)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.4 and 0.2.

Serum Perfluorooctane sulfonamide (PFOSA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	.300 (.200-.300)	.300 (.300-.400)	2094
	05-06	*	< LOD	.100 (<LOD-.200)	.200 (.200-.300)	.300 (.200-.500)	2120
Age group							
12-19 years	03-04	*	< LOD	< LOD	.300 (.200-.300)	.300 (.200-.500)	640
	05-06	*	< LOD	< LOD	.200 (.100-.300)	.300 (.200-.500)	640
20 years and older	03-04	*	< LOD	< LOD	.300 (.200-.300)	.300 (.300-.400)	1454
	05-06	*	< LOD	.100 (<LOD-.200)	.200 (.200-.300)	.300 (.200-.500)	1480
Gender							
Males	03-04	*	< LOD	< LOD	.300 (.200-.300)	.300 (.200-.500)	1053
	05-06	*	< LOD	.100 (.100-.200)	.200 (.200-.300)	.300 (.200-.600)	1048
Females	03-04	*	< LOD	< LOD	.300 (.200-.300)	.300 (.300-.500)	1041
	05-06	*	< LOD	.100 (<LOD-.100)	.200 (.200-.300)	.300 (.200-.400)	1072
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	485
	05-06	*	< LOD	< LOD	.200 (<LOD-.300)	.200 (<LOD-5.00)	499
Non-Hispanic blacks	03-04	*	< LOD	< LOD	.300 (.200-.300)	.300 (.200-.500)	538
	05-06	*	< LOD	< LOD	.200 (.100-.200)	.200 (.200-.400)	544
Non-Hispanic whites	03-04	*	< LOD	< LOD	.300 (.200-.300)	.300 (.300-.500)	962
	05-06	*	< LOD	.100 (.100-.200)	.200 (.200-.300)	.300 (.200-.500)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.2 and 0.1.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Serum 2-(N-Ethyl-perfluorooctane sulfonamido) acetic acid (Et-PFOSA-AcOH)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2094
	05-06	*	< LOD	< LOD	< LOD	.300 (<LOD-.300)	2120
Age group							
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	640
	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.400)	640
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1454
	05-06	*	< LOD	< LOD	< LOD	.300 (<LOD-.300)	1480
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1053
	05-06	*	< LOD	< LOD	< LOD	.300 (.200-.300)	1048
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1041
	05-06	*	< LOD	< LOD	< LOD	.300 (<LOD-.300)	1072
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	485
	05-06	*	< LOD	< LOD	< LOD	< LOD	499
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	.400 (<LOD-.500)	538
	05-06	*	< LOD	< LOD	< LOD	< LOD	544
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	962
	05-06	*	< LOD	< LOD	< LOD	.300 (.200-.400)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.4 and 0.2.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Serum 2-(N-Methyl-perfluorooctane sulfonamido) acetic acid (Me-PFOSA-AcOH)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	.700 (<LOD-.700)	1.00 (.900-1.10)	1.30 (1.10-1.50)	2094
	05-06	.470 (.426-.518)	.500 (.400-.500)	.800 (.700-.900)	1.40 (1.30-1.40)	1.80 (1.70-2.00)	2120
Age group							
12-19 years	03-04	*	< LOD	.700 (<LOD-.800)	1.10 (.900-1.30)	1.50 (1.20-1.80)	640
	05-06	.495 (.436-.562)	.500 (.400-.600)	.900 (.700-1.00)	1.30 (1.10-1.50)	1.70 (1.30-1.90)	640
20 years and older	03-04	*	< LOD	.700 (<LOD-.700)	1.00 (.900-1.10)	1.20 (1.10-1.60)	1454
	05-06	.466 (.423-.513)	.500 (.400-.500)	.800 (.700-.900)	1.40 (1.30-1.50)	1.90 (1.70-2.00)	1480
Gender							
Males	03-04	*	< LOD	.700 (<LOD-.700)	1.10 (.900-1.20)	1.30 (1.10-1.70)	1053
	05-06	.498 (.459-.541)	.500 (.400-.500)	.900 (.800-1.00)	1.40 (1.30-1.50)	1.90 (1.60-2.00)	1048
Females	03-04	*	< LOD	.600 (<LOD-.700)	1.00 (.900-1.10)	1.10 (1.00-1.80)	1041
	05-06	.444 (.392-.503)	.400 (.400-.500)	.800 (.700-.900)	1.30 (1.20-1.50)	1.80 (1.60-2.10)	1072
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	.700 (<LOD-.900)	.900 (<LOD-1.30)	485
	05-06	.335 (.281-.399)	.300 (.300-.400)	.500 (.400-.800)	.900 (.700-1.20)	1.20 (1.00-1.40)	499
Non-Hispanic blacks	03-04	*	< LOD	.800 (<LOD-.900)	1.10 (.900-1.40)	1.50 (1.10-1.80)	538
	05-06	.480 (.414-.557)	.500 (.400-.600)	.800 (.700-1.00)	1.40 (1.20-1.70)	1.90 (1.70-2.30)	544
Non-Hispanic whites	03-04	*	< LOD	.700 (<LOD-.800)	1.00 (.900-1.10)	1.30 (1.10-1.60)	962
	05-06	.491 (.436-.554)	.500 (.400-.600)	.900 (.800-1.00)	1.40 (1.30-1.50)	1.90 (1.60-2.10)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.6 and 0.2.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Serum Perfluoroundecanoic acid (PFUA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	*	< LOD	< LOD	< LOD	.600 (<LOD-1.30)	2094
	05-06	*	< LOD	.300 (.200-.400)	.500 (.400-.800)	.700 (.600-1.20)	2120
Age group							
12-19 years	03-04	*	< LOD	< LOD	< LOD	.300 (<LOD-1.10)	640
	05-06	*	< LOD	< LOD	.300 (.200-.500)	.500 (.300-.900)	640
20 years and older	03-04	*	< LOD	< LOD	.300 (<LOD-.600)	.600 (<LOD-1.40)	1454
	05-06	*	< LOD	.300 (.200-.400)	.500 (.400-.800)	.800 (.600-1.10)	1480
Gender							
Males	03-04	*	< LOD	< LOD	.400 (<LOD-1.00)	.700 (<LOD-2.30)	1053
	05-06	*	< LOD	.300 (.200-.400)	.600 (.400-.700)	.800 (.600-1.10)	1048
Females	03-04	*	< LOD	< LOD	< LOD	.400 (<LOD-.700)	1041
	05-06	*	< LOD	.300 (<LOD-.400)	.500 (.400-.700)	.700 (.500-1.10)	1072
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	485
	05-06	*	< LOD	< LOD	.300 (<LOD-.700)	.500 (.300-1.00)	499
Non-Hispanic blacks	03-04	*	< LOD	< LOD	.600 (<LOD-1.40)	.900 (.300-2.90)	538
	05-06	*	< LOD	.300 (<LOD-.500)	.600 (.400-1.50)	1.20 (.600-2.70)	544
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	.500 (<LOD-.900)	962
	05-06	*	< LOD	.300 (.200-.400)	.500 (.400-.700)	.600 (.400-1.50)	935

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.3 and 0.2.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mono-benzyl phthalate (MBzP)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	15.3 (13.7-17.1)	17.0 (15.3-18.9)	35.4 (32.6-39.7)	67.1 (55.3-82.4)	103 (94.6-116)	2541
	01-02	15.1 (13.9-16.3)	15.8 (14.8-17.4)	38.0 (34.5-41.2)	80.8 (71.3-88.2)	122 (102-142)	2782
	03-04	13.7 (12.7-14.9)	14.3 (12.8-16.4)	32.3 (30.1-35.0)	66.5 (57.3-75.6)	101 (85.3-125)	2605
	05-06	11.6 (10.1-13.2)	12.4 (10.8-14.4)	28.8 (25.3-32.9)	62.0 (52.2-73.4)	93.2 (79.7-108)	2548
Age group							
6-11 years	99-00	39.4 (32.9-47.2)	40.3 (33.8-48.6)	82.0 (55.8-98.1)	129 (98.1-214)	214 (108-399)	328
	01-02	33.4 (29.1-38.4)	37.0 (26.6-43.4)	68.5 (61.6-92.8)	166 (116-191)	235 (183-330)	393
	03-04	33.9 (28.2-40.6)	35.0 (30.1-39.8)	63.8 (50.4-92.4)	145 (110-213)	255 (146-365)	342
	05-06	29.6 (26.6-33.0)	32.7 (26.9-36.9)	64.0 (51.5-79.0)	109 (89.3-145)	161 (123-190)	356
12-19 years	99-00	25.6 (21.9-30.0)	28.3 (22.3-34.8)	51.2 (43.7-58.5)	88.5 (67.2-115)	125 (93.7-170)	752
	01-02	23.2 (19.9-27.2)	24.9 (21.2-31.0)	55.5 (47.4-62.9)	113 (91.8-133)	169 (134-198)	742
	03-04	22.1 (19.4-25.1)	24.9 (22.3-27.2)	49.9 (39.8-64.6)	89.8 (71.1-120)	152 (99.9-190)	729
	05-06	19.7 (16.6-23.4)	20.5 (16.0-25.4)	44.1 (33.6-56.9)	87.0 (61.1-118)	131 (94.0-186)	702
20 years and older	99-00	12.4 (10.9-14.2)	13.8 (12.1-15.6)	29.2 (25.2-33.1)	52.0 (43.9-62.5)	86.3 (54.7-119)	1461
	01-02	12.7 (11.7-13.9)	13.9 (12.8-14.9)	31.8 (28.5-33.5)	65.4 (53.8-76.3)	99.7 (82.8-121)	1647
	03-04	11.4 (10.3-12.7)	12.1 (10.8-13.5)	27.0 (23.6-29.4)	54.2 (47.1-61.5)	79.5 (66.5-94.8)	1534
	05-06	9.54 (8.34-10.9)	10.2 (8.90-12.1)	23.8 (20.1-27.3)	47.2 (39.3-60.3)	79.0 (63.8-92.6)	1490
Gender							
Males	99-00	16.2 (14.1-18.6)	17.7 (15.2-20.0)	35.4 (31.5-40.3)	69.4 (59.9-87.2)	108 (96.3-130)	1215
	01-02	15.6 (13.6-17.9)	16.0 (14.6-18.5)	37.0 (33.1-43.0)	78.4 (63.5-97.4)	122 (88.2-183)	1371
	03-04	14.6 (13.2-16.2)	15.1 (13.2-17.5)	32.3 (29.5-35.6)	65.6 (53.6-79.6)	101 (78.6-132)	1250
	05-06	13.2 (11.4-15.2)	14.2 (12.2-17.0)	32.3 (26.8-36.0)	71.7 (55.3-85.6)	98.6 (85.6-116)	1270
Females	99-00	14.6 (12.7-16.6)	16.1 (14.2-19.2)	35.8 (30.8-41.4)	63.7 (53.7-82.4)	103 (84.2-116)	1326
	01-02	14.6 (13.1-16.3)	15.4 (13.8-17.9)	38.1 (32.3-43.8)	81.4 (68.3-91.6)	122 (102-143)	1411
	03-04	13.0 (11.8-14.2)	13.3 (12.1-15.6)	33.3 (29.5-36.2)	67.1 (58.8-72.4)	101 (84.4-120)	1355
	05-06	10.2 (8.75-11.9)	10.7 (9.10-13.0)	25.6 (21.7-30.9)	54.8 (45.8-64.3)	86.2 (66.6-102)	1278
Race/ethnicity							
Mexican Americans	99-00	13.9 (12.1-16.1)	15.7 (13.4-16.9)	33.0 (27.5-36.1)	67.5 (55.5-84.0)	98.8 (80.6-150)	814
	01-02	13.2 (10.8-16.2)	14.8 (10.8-18.5)	29.5 (26.2-38.1)	70.4 (53.0-85.4)	94.7 (70.3-161)	677
	03-04	14.9 (13.2-16.7)	15.5 (13.5-18.3)	32.4 (27.7-35.4)	71.4 (48.6-92.3)	99.8 (86.5-145)	652
	05-06	12.4 (9.89-15.6)	14.2 (11.9-16.5)	27.9 (19.9-43.0)	59.9 (47.1-69.2)	83.1 (60.6-107)	637
Non-Hispanic blacks	99-00	23.0 (20.7-25.5)	23.1 (20.5-25.6)	49.3 (44.0-55.6)	94.7 (80.0-130)	138 (106-241)	603
	01-02	23.8 (21.0-26.9)	24.2 (19.9-28.0)	50.6 (41.5-62.9)	101 (86.4-127)	143 (127-179)	703
	03-04	18.9 (16.3-21.8)	20.0 (15.4-24.6)	43.8 (38.9-49.0)	80.9 (70.0-106)	120 (99.7-172)	699
	05-06	16.6 (12.5-21.9)	17.6 (14.0-23.7)	36.2 (29.1-48.6)	84.2 (65.6-104)	116 (104-141)	678
Non-Hispanic whites	99-00	14.3 (12.7-16.1)	16.1 (14.3-18.6)	34.0 (30.6-38.4)	58.7 (51.3-74.1)	103 (74.1-116)	912
	01-02	14.0 (12.7-15.4)	14.6 (13.4-15.6)	35.6 (32.2-39.5)	76.6 (66.1-90.3)	122 (93.2-155)	1216
	03-04	12.9 (11.5-14.3)	13.2 (11.7-16.0)	30.5 (27.8-35.1)	63.8 (53.6-72.4)	91.5 (76.3-122)	1088
	05-06	10.7 (9.18-12.4)	11.2 (9.70-14.0)	27.5 (23.8-32.7)	60.3 (45.0-72.9)	91.4 (72.9-107)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.8, 0.3, 0.1, and 0.3 respectively.

Urinary Mono-benzyl phthalate (MBzP) (creatinine corrected)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)		Selected percentiles (95% confidence interval)			Sample size
		50th	75th	90th	95th		
Total	99-00	14.0 (13.0-15.0)	13.3 (12.8-14.3)	25.1 (23.4-27.2)	50.1 (41.5-58.8)	77.4 (69.6-86.3)	2541
	01-02	14.1 (13.2-15.1)	13.5 (12.7-14.4)	26.6 (24.7-29.1)	54.8 (49.1-58.5)	90.4 (74.4-102)	2782
	03-04	12.9 (12.2-13.7)	12.6 (11.2-13.6)	24.6 (22.2-26.4)	46.0 (41.0-51.5)	70.0 (62.4-79.9)	2605
	05-06	11.3 (10.1-12.5)	11.4 (10.2-12.5)	21.2 (19.3-24.2)	41.9 (36.7-48.8)	65.8 (59.3-74.0)	2548
Age group							
6-11 years	99-00	40.0 (33.6-47.6)	38.6 (30.2-51.3)	73.5 (56.6-99.2)	104 (89.4-142)	142 (99.8-173)	328
	01-02	38.1 (34.4-42.1)	37.4 (33.8-42.2)	67.9 (55.8-80.4)	134 (116-176)	195 (121-305)	393
	03-04	35.8 (30.5-42.1)	32.2 (27.9-40.5)	60.8 (50.1-79.4)	136 (85.5-213)	229 (99.7-397)	342
	05-06	32.6 (29.3-36.4)	35.4 (28.5-41.0)	65.4 (49.8-80.2)	108 (87.2-131)	144 (119-180)	356
12-19 years	99-00	17.3 (15.4-19.4)	17.1 (14.6-20.3)	28.3 (24.3-34.8)	49.7 (38.8-69.3)	70.0 (49.6-81.9)	752
	01-02	17.9 (15.7-20.5)	18.1 (15.7-20.8)	33.9 (29.3-38.6)	67.7 (55.8-85.9)	100 (80.7-123)	742
	03-04	16.6 (15.4-17.8)	16.9 (15.4-18.2)	30.1 (25.1-35.5)	52.2 (40.7-61.8)	77.7 (54.9-115)	729
	05-06	14.7 (12.7-17.0)	14.6 (11.6-18.1)	25.8 (22.1-32.9)	49.8 (39.0-63.9)	67.8 (57.4-90.7)	702
20 years and older	99-00	11.8 (10.7-12.9)	12.1 (11.1-12.9)	20.1 (18.4-23.3)	34.6 (30.6-40.9)	57.2 (41.3-73.9)	1461
	01-02	12.0 (11.2-12.9)	11.8 (11.1-12.5)	21.6 (19.9-23.7)	42.3 (35.8-48.3)	64.9 (54.2-78.3)	1647
	03-04	11.0 (10.3-11.7)	10.5 (9.69-11.6)	19.7 (18.2-21.4)	36.6 (34.8-39.1)	55.8 (46.9-62.4)	1534
	05-06	9.57 (8.61-10.6)	9.86 (9.17-10.7)	18.2 (16.8-19.7)	31.1 (27.7-35.4)	48.0 (40.2-59.9)	1490
Gender							
Males	99-00	12.7 (11.8-13.6)	12.4 (11.6-13.0)	23.7 (21.5-26.1)	44.5 (35.5-57.0)	73.5 (48.5-99.8)	1215
	01-02	12.7 (11.4-14.2)	11.9 (10.9-13.2)	24.1 (21.0-26.4)	49.1 (43.7-56.1)	80.3 (60.9-104)	1371
	03-04	11.5 (10.6-12.4)	11.1 (9.73-12.5)	21.1 (19.5-23.6)	39.4 (34.2-49.7)	62.9 (51.9-83.1)	1250
	05-06	10.6 (9.24-12.1)	10.5 (9.23-12.4)	19.9 (18.1-23.1)	41.6 (35.4-48.0)	60.6 (50.3-67.0)	1270
Females	99-00	15.3 (13.8-16.8)	14.7 (13.3-16.0)	25.9 (24.1-29.3)	56.4 (46.8-60.6)	80.4 (60.2-117)	1326
	01-02	15.6 (14.2-17.3)	15.1 (13.9-16.5)	29.4 (25.8-34.1)	58.5 (49.9-69.4)	95.8 (69.4-116)	1411
	03-04	14.4 (13.4-15.6)	13.9 (12.8-15.1)	27.9 (24.7-31.4)	51.9 (43.4-60.3)	73.4 (63.7-90.2)	1355
	05-06	12.0 (10.9-13.2)	12.0 (11.3-12.9)	22.2 (20.5-25.4)	44.4 (36.6-57.5)	72.6 (62.8-87.2)	1278
Race/ethnicity							
Mexican Americans	99-00	12.6 (11.4-14.0)	11.9 (10.9-13.2)	24.1 (21.5-26.5)	46.5 (42.0-53.8)	68.2 (56.4-93.8)	814
	01-02	12.4 (10.7-14.4)	11.9 (9.95-14.9)	23.7 (19.5-29.0)	46.6 (36.5-61.6)	71.6 (51.1-120)	677
	03-04	13.4 (11.7-15.4)	12.5 (11.5-13.4)	24.1 (21.0-27.8)	53.0 (38.3-64.8)	77.8 (57.1-125)	652
	05-06	11.2 (9.30-13.5)	11.6 (10.4-12.4)	22.3 (17.5-28.0)	43.0 (31.2-56.3)	63.5 (43.5-75.2)	637
Non-Hispanic blacks	99-00	14.8 (13.5-16.3)	13.7 (12.2-15.2)	26.9 (22.5-31.8)	56.3 (39.5-76.0)	86.8 (64.4-99.8)	603
	01-02	16.7 (14.7-19.0)	15.7 (13.7-19.3)	33.4 (26.5-38.0)	60.1 (53.7-69.4)	108 (75.6-116)	703
	03-04	13.4 (11.8-15.3)	13.6 (11.6-15.6)	24.1 (21.9-28.7)	50.0 (41.2-57.8)	74.7 (59.0-90.5)	699
	05-06	11.6 (8.94-15.2)	11.4 (9.33-14.8)	22.3 (17.8-29.9)	47.4 (35.9-61.0)	72.6 (55.4-87.4)	678
Non-Hispanic whites	99-00	14.0 (12.7-15.3)	13.4 (12.9-14.8)	25.3 (23.1-27.4)	53.3 (38.8-64.8)	78.0 (67.4-90.3)	912
	01-02	13.8 (12.8-14.9)	13.0 (12.1-14.3)	25.7 (23.8-27.9)	53.1 (46.5-58.5)	89.2 (69.0-109)	1216
	03-04	12.7 (11.8-13.7)	12.5 (10.8-13.8)	24.4 (21.6-26.7)	41.9 (39.0-48.8)	65.6 (57.5-79.5)	1088
	05-06	11.2 (9.96-12.6)	11.6 (10.2-13.2)	21.1 (19.0-24.2)	41.5 (34.9-50.7)	65.8 (55.6-79.4)	1038

Urinary Mono-isobutyl phthalate (MiBP)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	2.71 (2.49-2.94)	2.70 (2.40-3.00)	5.70 (5.30-6.10)	12.0 (11.4-12.7)	17.9 (16.3-19.8)	2782
	03-04	3.80 (3.40-4.25)	4.20 (3.70-4.80)	8.40 (7.40-9.50)	15.0 (13.1-17.3)	21.3 (18.6-26.0)	2605
	05-06	5.20 (4.64-5.83)	5.80 (5.40-6.60)	11.9 (10.6-13.3)	21.3 (18.7-23.7)	31.6 (27.1-37.2)	2548
Age group							
6-11 years	01-02	4.22 (3.28-5.43)	4.40 (3.20-6.20)	10.7 (7.30-13.4)	18.6 (14.2-22.0)	23.4 (20.4-27.8)	393
	03-04	6.56 (5.24-8.22)	7.00 (5.10-9.10)	12.8 (9.40-17.7)	24.3 (19.6-34.5)	40.6 (29.3-48.5)	342
	05-06	8.53 (7.67-9.48)	9.00 (8.20-10.3)	15.8 (13.7-19.2)	33.2 (27.5-38.4)	49.1 (33.2-54.4)	356
12-19 years	01-02	3.48 (2.90-4.17)	3.80 (2.90-4.40)	7.40 (6.00-9.00)	14.5 (11.7-18.6)	22.3 (16.2-33.4)	742
	03-04	4.55 (3.73-5.55)	5.60 (4.50-6.30)	10.1 (8.00-11.4)	17.1 (13.3-20.9)	22.7 (18.5-29.1)	729
	05-06	7.46 (6.53-8.51)	7.90 (6.90-9.80)	16.2 (13.6-19.3)	29.2 (23.6-31.3)	34.1 (30.1-49.9)	702
20 years and older	01-02	2.46 (2.30-2.63)	2.40 (2.20-2.70)	5.10 (4.80-5.50)	10.6 (9.40-12.0)	16.3 (13.6-18.5)	1647
	03-04	3.46 (3.11-3.84)	3.90 (3.40-4.30)	7.50 (6.70-8.50)	13.3 (11.5-16.5)	19.9 (16.0-25.0)	1534
	05-06	4.65 (4.07-5.30)	5.40 (4.70-6.00)	10.6 (9.50-12.0)	18.7 (16.0-21.9)	29.0 (22.1-34.4)	1490
Gender							
Males	01-02	2.73 (2.50-2.97)	2.80 (2.40-3.20)	5.60 (5.00-6.10)	11.6 (10.1-12.6)	16.6 (13.6-20.1)	1371
	03-04	4.07 (3.56-4.66)	4.30 (3.80-5.10)	9.20 (7.50-10.2)	16.0 (13.3-18.5)	22.7 (17.3-30.3)	1250
	05-06	5.65 (5.08-6.29)	6.20 (5.60-6.90)	11.9 (10.7-13.3)	22.1 (18.7-26.5)	32.3 (25.5-39.8)	1270
Females	01-02	2.68 (2.44-2.96)	2.60 (2.30-3.00)	5.80 (5.30-6.50)	12.6 (11.0-14.7)	18.7 (16.3-24.0)	1411
	03-04	3.56 (3.19-3.97)	4.10 (3.50-4.50)	8.00 (7.10-9.10)	14.2 (12.5-16.6)	20.5 (17.9-23.0)	1355
	05-06	4.80 (4.15-5.55)	5.50 (4.70-6.60)	11.9 (10.1-13.6)	19.6 (17.0-24.1)	29.8 (24.6-35.9)	1278
Race/ethnicity							
Mexican Americans	01-02	3.26 (2.72-3.91)	3.40 (2.70-4.30)	7.20 (6.20-9.30)	12.2 (11.2-14.7)	18.4 (14.1-25.6)	677
	03-04	4.81 (3.85-6.02)	5.10 (4.00-6.70)	10.2 (8.20-12.6)	18.3 (13.5-24.5)	26.0 (19.0-38.5)	652
	05-06	6.88 (5.58-8.48)	7.30 (6.00-8.90)	14.5 (11.5-17.5)	26.3 (20.7-34.1)	40.4 (33.8-46.8)	637
Non-Hispanic blacks	01-02	4.90 (4.46-5.37)	5.30 (4.60-6.00)	10.7 (9.20-12.0)	18.3 (16.1-20.1)	25.5 (20.7-31.3)	703
	03-04	6.67 (5.97-7.46)	6.90 (6.30-7.50)	12.6 (10.9-14.7)	25.7 (17.7-31.0)	33.5 (27.3-43.9)	699
	05-06	8.37 (7.06-9.91)	8.70 (7.50-10.2)	16.1 (13.8-19.7)	30.1 (22.1-37.2)	41.4 (30.1-67.7)	678
Non-Hispanic whites	01-02	2.33 (2.10-2.59)	2.30 (1.90-2.60)	4.90 (4.40-5.30)	9.60 (8.30-11.6)	15.6 (13.0-18.6)	1216
	03-04	3.17 (2.82-3.56)	3.50 (3.00-4.00)	6.80 (5.90-7.90)	12.5 (10.6-14.5)	17.6 (14.7-20.8)	1088
	05-06	4.41 (3.86-5.04)	5.00 (4.20-5.70)	10.3 (9.10-11.5)	18.7 (16.3-21.1)	28.8 (22.1-32.2)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 1.0, 0.3, and 0.3.

Urinary Mono-isobutyl phthalate (MiBP) (creatinine corrected)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	2.54 (2.36-2.73)	2.46 (2.26-2.68)	4.54 (4.20-4.86)	8.02 (7.78-8.66)	12.0 (10.8-13.5)	2782
	03-04	3.57 (3.18-4.00)	3.57 (3.15-4.08)	6.21 (5.36-7.17)	10.9 (9.47-12.7)	15.4 (12.8-18.6)	2605
	05-06	5.07 (4.68-5.50)	5.07 (4.74-5.45)	8.81 (8.08-9.55)	15.2 (13.4-16.5)	21.3 (18.3-24.3)	2548
Age group							
6-11 years	01-02	4.81 (3.89-5.94)	5.18 (4.13-6.32)	9.20 (7.03-11.7)	15.2 (11.1-24.3)	24.3 (13.9-40.3)	393
	03-04	6.94 (5.79-8.31)	7.03 (5.29-8.95)	11.8 (9.56-15.1)	18.6 (15.1-25.1)	28.7 (21.8-36.9)	342
	05-06	9.39 (8.56-10.3)	9.46 (8.50-10.3)	15.3 (13.0-18.1)	25.2 (21.6-30.1)	37.9 (28.0-65.5)	356
12-19 years	01-02	2.68 (2.29-3.15)	2.83 (2.39-3.33)	4.79 (4.04-5.51)	7.62 (6.18-10.2)	12.8 (8.76-15.6)	742
	03-04	3.41 (2.86-4.05)	3.69 (2.99-4.31)	5.75 (4.69-7.04)	9.32 (7.17-12.0)	13.5 (9.52-20.1)	729
	05-06	5.56 (5.05-6.11)	5.82 (5.20-6.53)	9.05 (8.06-10.4)	14.3 (13.4-16.5)	20.3 (17.7-26.8)	702
20 years and older	01-02	2.33 (2.20-2.46)	2.26 (2.08-2.43)	3.89 (3.65-4.25)	7.31 (7.00-7.78)	10.6 (9.46-11.3)	1647
	03-04	3.32 (3.00-3.68)	3.33 (3.00-3.81)	5.59 (4.93-6.51)	9.84 (8.65-11.2)	13.5 (11.4-16.0)	1534
	05-06	4.66 (4.23-5.13)	4.62 (4.36-5.03)	8.00 (7.23-8.78)	13.5 (11.6-15.7)	18.2 (16.1-23.0)	1490
Gender							
Males	01-02	2.22 (2.09-2.35)	2.18 (1.97-2.37)	3.76 (3.58-4.11)	7.38 (6.64-7.95)	11.1 (10.1-12.5)	1371
	03-04	3.20 (2.80-3.66)	3.19 (2.74-3.56)	5.84 (4.79-6.56)	10.0 (8.27-12.2)	13.9 (11.5-19.1)	1250
	05-06	4.54 (4.19-4.92)	4.45 (4.21-4.81)	7.95 (6.95-8.73)	13.4 (11.6-15.8)	18.5 (16.7-19.8)	1270
Females	01-02	2.88 (2.61-3.18)	2.85 (2.52-3.18)	5.14 (4.67-5.89)	8.66 (8.02-10.1)	13.7 (11.1-15.0)	1411
	03-04	3.96 (3.56-4.42)	4.00 (3.57-4.45)	6.73 (5.64-7.80)	11.6 (10.2-13.0)	15.7 (13.0-18.7)	1355
	05-06	5.64 (5.04-6.32)	5.86 (5.39-6.39)	9.61 (8.85-10.6)	15.8 (14.3-18.1)	24.3 (18.7-32.5)	1278
Race/ethnicity							
Mexican Americans	01-02	3.07 (2.58-3.66)	2.98 (2.53-3.82)	5.82 (4.91-6.99)	10.6 (8.28-13.3)	16.0 (12.6-19.4)	677
	03-04	4.34 (3.47-5.43)	4.47 (3.53-5.24)	7.75 (6.33-9.69)	13.1 (11.9-16.8)	23.3 (17.9-26.1)	652
	05-06	6.19 (5.24-7.31)	6.17 (5.59-7.02)	10.9 (9.61-12.3)	18.6 (17.1-21.5)	28.3 (23.7-36.2)	637
Non-Hispanic blacks	01-02	3.44 (3.20-3.69)	3.52 (2.95-3.81)	6.11 (5.03-7.04)	10.6 (8.94-12.4)	15.6 (12.6-19.7)	703
	03-04	4.74 (4.07-5.51)	4.65 (4.10-5.30)	7.81 (6.38-10.0)	15.2 (10.8-18.4)	19.9 (15.7-28.7)	699
	05-06	5.88 (5.12-6.76)	5.86 (5.03-7.03)	9.74 (8.21-11.3)	14.9 (12.0-19.9)	21.4 (14.9-29.7)	678
Non-Hispanic whites	01-02	2.31 (2.11-2.52)	2.20 (2.01-2.43)	3.80 (3.53-4.39)	7.30 (6.72-7.78)	10.7 (9.62-12.6)	1216
	03-04	3.13 (2.76-3.54)	3.17 (2.76-3.72)	5.28 (4.55-6.21)	8.92 (7.64-10.3)	11.8 (10.2-15.1)	1088
	05-06	4.64 (4.25-5.07)	4.58 (4.35-4.91)	8.28 (7.45-9.01)	13.7 (12.2-15.6)	18.8 (16.9-22.2)	1038

Urinary Mono-n-butyl phthalate (MnBP)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00*	24.6 (22.1-27.4)	26.0 (23.6-29.2)	51.6 (44.5-60.3)	98.6 (90.2-114)	150 (121-169)	2541
	01-02	18.9 (17.4-20.6)	20.4 (19.2-21.8)	40.4 (36.5-44.2)	73.6 (65.3-85.6)	108 (94.1-122)	2782
	03-04	21.1 (19.8-22.5)	23.2 (21.2-24.8)	42.7 (38.5-47.2)	80.7 (70.2-93.9)	122 (104-137)	2605
	05-06	19.6 (18.2-21.3)	20.6 (18.6-23.0)	40.4 (36.4-44.9)	71.5 (66.5-79.5)	107 (96.3-124)	2548
Age group							
6-11 years	99-00*	41.4 (35.6-48.0)	40.0 (36.2-49.2)	75.5 (59.1-92.8)	124 (98.4-159)	166 (127-279)	328
	01-02	31.1 (26.6-36.5)	32.4 (25.6-37.1)	62.1 (51.3-76.9)	107 (84.3-136)	159 (110-290)	393
	03-04	36.3 (30.7-42.9)	36.7 (28.5-47.5)	71.3 (56.9-87.2)	137 (107-162)	191 (150-243)	342
	05-06	30.5 (27.5-33.8)	32.3 (27.8-35.0)	57.4 (46.8-65.4)	93.4 (75.6-130)	136 (108-181)	356
12-19 years	99-00*	36.0 (30.8-42.1)	36.3 (30.6-44.9)	68.6 (55.9-79.7)	119 (90.2-159)	165 (121-227)	752
	01-02	25.1 (21.6-29.2)	26.7 (22.0-32.7)	52.6 (48.4-60.4)	92.4 (72.7-121)	148 (106-185)	742
	03-04	26.7 (24.1-29.5)	28.2 (25.2-33.1)	52.0 (45.3-60.9)	97.5 (74.7-116)	134 (110-158)	729
	05-06	27.5 (24.3-31.3)	29.0 (23.7-36.6)	57.2 (48.7-64.9)	88.6 (75.1-105)	125 (96.2-154)	702
20 years and older	99-00*	21.6 (19.0-24.5)	23.1 (19.7-26.1)	46.3 (36.9-53.6)	95.0 (78.7-111)	143 (117-161)	1461
	01-02	17.0 (15.4-18.8)	19.1 (17.1-20.4)	35.1 (31.6-40.2)	64.8 (57.3-79.7)	95.4 (84.6-113)	1647
	03-04	19.0 (17.7-20.5)	20.7 (18.9-22.9)	38.4 (35.7-42.7)	74.7 (64.1-82.6)	108 (90.7-127)	1534
	05-06	17.7 (16.0-19.6)	18.4 (16.6-20.6)	36.7 (32.5-41.4)	65.1 (55.4-74.3)	101 (84.3-121)	1490
Gender							
Males	99-00*	22.0 (20.1-24.1)	23.2 (20.4-26.3)	43.1 (36.6-49.5)	84.4 (71.3-96.2)	116 (97.8-132)	1215
	01-02	17.7 (16.0-19.6)	19.3 (17.3-21.0)	34.5 (30.3-40.6)	62.1 (54.1-75.5)	95.2 (75.5-117)	1371
	03-04	20.0 (18.1-22.0)	21.1 (19.0-24.0)	39.4 (35.5-43.4)	65.5 (59.0-73.0)	95.9 (79.8-111)	1250
	05-06	19.8 (18.4-21.4)	20.7 (19.0-23.0)	38.5 (34.6-42.0)	63.8 (56.8-72.0)	96.2 (79.0-113)	1270
Females	99-00*	27.3 (23.6-31.5)	30.0 (25.9-33.3)	59.7 (51.6-69.6)	120 (98.3-145)	167 (143-223)	1326
	01-02	20.2 (18.2-22.4)	21.7 (19.7-24.3)	46.7 (43.1-51.1)	85.0 (72.7-92.5)	121 (106-136)	1411
	03-04	22.2 (21.2-23.3)	24.4 (23.4-25.8)	47.3 (42.7-53.0)	95.9 (79.9-114)	137 (122-156)	1355
	05-06	19.5 (17.2-22.0)	20.4 (17.1-24.7)	42.3 (36.7-52.0)	83.2 (71.0-90.2)	124 (101-137)	1278
Race/ethnicity							
Mexican Americans	99-00*	23.4 (21.8-25.1)	26.3 (23.9-28.1)	48.1 (41.2-56.7)	92.2 (78.9-101)	117 (104-131)	814
	01-02	20.1 (16.6-24.5)	23.1 (18.0-26.5)	42.1 (34.0-51.5)	77.1 (62.9-92.5)	112 (84.6-143)	677
	03-04	24.1 (19.8-29.5)	26.9 (20.2-32.0)	47.4 (38.0-58.5)	85.6 (61.7-117)	127 (99.8-165)	652
	05-06	22.4 (18.6-27.0)	23.5 (19.0-29.0)	45.4 (37.1-55.4)	90.2 (71.1-119)	132 (106-174)	637
Non-Hispanic blacks	99-00*	37.0 (31.9-42.9)	38.7 (33.4-44.5)	78.2 (58.7-91.8)	118 (108-143)	167 (143-197)	603
	01-02	29.6 (26.6-33.1)	31.5 (28.7-34.1)	58.3 (51.2-63.4)	93.2 (79.5-121)	138 (110-184)	703
	03-04	30.1 (28.4-31.9)	31.5 (29.7-34.1)	64.1 (58.3-67.1)	106 (94.8-119)	144 (115-168)	699
	05-06	27.1 (23.1-31.8)	28.5 (25.0-31.2)	53.1 (39.9-65.8)	105 (77.3-135)	143 (118-183)	678
Non-Hispanic whites	99-00*	21.8 (19.3-24.6)	23.2 (19.5-27.5)	46.3 (37.5-53.3)	90.2 (74.7-106)	142 (111-161)	912
	01-02	17.6 (16.0-19.3)	19.2 (17.0-21.0)	36.6 (32.4-42.6)	69.2 (59.2-87.6)	107 (89.8-123)	1216
	03-04	18.9 (17.6-20.3)	20.7 (18.9-22.8)	38.4 (35.5-42.7)	71.3 (60.1-80.0)	101 (90.7-124)	1088
	05-06	17.8 (16.2-19.5)	18.6 (16.9-20.7)	37.8 (33.1-42.1)	65.4 (55.4-73.9)	95.9 (79.5-113)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.9, 1.1, 0.4, and 0.6 respectively.

*In the 1999-2000 survey period, concentrations of mono-isobutyl phthalate and mono-n-butyl phthalate were measured together and expressed as a combined value, referred to as monobutyl phthalate (MBP).

Urinary Mono-n-butyl phthalate (MnBP) (creatinine corrected)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00*	22.4 (20.6-24.4)	21.9 (19.8-24.3)	38.9 (35.0-41.8)	68.3 (60.3-78.3)	97.7 (81.4-131)	2541
	01-02	17.8 (16.7-19.0)	17.4 (16.3-18.4)	30.3 (28.1-32.3)	52.4 (47.4-61.0)	81.3 (71.0-92.5)	2782
	03-04	19.8 (18.5-21.2)	19.3 (17.7-20.8)	33.9 (30.9-38.5)	59.0 (52.9-68.1)	91.6 (74.1-115)	2605
	05-06	19.2 (18.0-20.4)	18.3 (16.8-19.8)	30.8 (29.0-33.0)	50.8 (47.8-56.6)	77.8 (67.2-94.8)	2548
Age group							
6-11 years	99-00*	41.9 (37.4-47.1)	39.1 (34.3-49.0)	65.9 (56.7-80.0)	108 (71.2-179)	159 (102-263)	328
	01-02	35.4 (31.7-39.6)	35.1 (29.3-38.9)	55.4 (50.1-62.3)	84.0 (69.0-113)	147 (93.8-235)	393
	03-04	38.4 (33.8-43.6)	39.0 (34.7-42.6)	59.3 (52.9-68.1)	104 (83.6-119)	137 (108-198)	342
	05-06	33.6 (30.8-36.6)	33.9 (30.6-37.4)	50.6 (45.0-58.3)	78.5 (66.8-111)	128 (73.4-172)	356
12-19 years	99-00*	24.3 (21.2-27.8)	23.7 (20.6-27.4)	37.6 (31.6-43.8)	63.3 (52.4-76.4)	88.1 (61.5-142)	752
	01-02	19.4 (17.3-21.7)	20.3 (17.5-22.3)	34.9 (30.5-37.9)	53.4 (45.2-73.9)	89.7 (60.3-106)	742
	03-04	20.0 (18.7-21.3)	19.8 (18.2-21.7)	30.7 (27.9-34.8)	52.7 (43.4-65.4)	74.4 (56.0-90.9)	729
	05-06	20.5 (19.0-22.2)	21.2 (18.8-22.9)	31.9 (29.6-33.8)	49.3 (42.1-56.4)	70.2 (52.0-108)	702
20 years and older	99-00*	20.4 (18.6-22.4)	19.5 (18.1-21.4)	34.9 (30.3-40.0)	62.4 (53.4-72.1)	91.0 (70.4-135)	1461
	01-02	16.1 (15.0-17.3)	15.5 (14.2-16.5)	26.3 (24.2-28.6)	44.2 (38.7-51.1)	71.6 (61.2-85.6)	1647
	03-04	18.3 (17.0-19.6)	17.7 (16.6-19.2)	31.0 (27.4-34.0)	53.3 (46.5-64.2)	83.8 (65.3-114)	1534
	05-06	17.8 (16.4-19.2)	16.8 (15.6-18.4)	28.1 (25.3-30.9)	46.1 (41.5-53.0)	74.3 (55.4-94.8)	1490
Gender							
Males	99-00*	17.3 (16.1-18.6)	17.0 (15.5-18.8)	28.6 (25.8-32.1)	49.3 (42.6-53.5)	64.7 (57.3-71.5)	1215
	01-02	14.4 (13.5-15.4)	13.7 (12.9-14.9)	22.9 (20.8-24.6)	39.9 (35.6-44.0)	60.0 (50.5-76.2)	1371
	03-04	15.7 (14.5-16.9)	14.8 (13.6-16.0)	25.4 (23.6-28.1)	41.4 (37.0-47.5)	59.4 (50.3-81.5)	1250
	05-06	15.9 (15.1-16.8)	15.4 (14.2-16.4)	24.9 (23.1-27.0)	38.6 (35.7-42.3)	51.2 (46.1-63.5)	1270
Females	99-00*	28.6 (25.3-32.3)	28.8 (25.5-30.5)	50.6 (41.9-56.3)	84.3 (69.2-106)	134 (93.6-155)	1326
	01-02	21.7 (19.6-23.9)	21.6 (19.7-23.6)	35.8 (33.0-38.7)	64.9 (58.9-70.2)	91.5 (81.4-103)	1411
	03-04	24.8 (22.9-26.8)	24.1 (21.6-26.8)	42.9 (39.2-48.9)	74.9 (64.2-86.6)	117 (83.6-139)	1355
	05-06	22.9 (20.9-25.1)	21.5 (19.4-24.6)	37.1 (33.3-41.9)	67.2 (56.8-74.4)	99.6 (77.8-128)	1278
Race/ethnicity							
Mexican Americans	99-00*	21.2 (19.3-23.3)	20.0 (18.2-22.9)	40.1 (32.6-44.3)	63.6 (57.5-70.1)	82.9 (73.9-100)	814
	01-02	19.0 (16.2-22.2)	19.2 (16.3-21.9)	33.7 (28.3-39.6)	61.0 (43.9-84.0)	86.7 (60.6-128)	677
	03-04	21.8 (17.7-26.8)	20.4 (17.4-24.0)	37.6 (29.6-50.1)	75.3 (55.6-92.0)	96.3 (76.4-164)	652
	05-06	20.1 (17.8-22.8)	19.1 (16.4-23.0)	34.3 (29.2-42.6)	64.8 (54.6-75.9)	98.1 (70.2-154)	637
Non-Hispanic blacks	99-00*	23.9 (21.3-26.8)	25.0 (20.7-28.1)	42.2 (35.9-49.6)	70.0 (61.1-83.9)	96.2 (83.9-105)	603
	01-02	20.8 (18.8-23.1)	20.2 (19.2-22.8)	34.5 (30.9-36.8)	62.8 (50.6-74.6)	85.6 (72.1-99.0)	703
	03-04	21.4 (19.5-23.4)	22.0 (19.6-24.8)	35.4 (31.6-42.7)	65.7 (54.0-75.3)	94.0 (71.1-128)	699
	05-06	19.1 (16.4-22.1)	18.5 (16.2-20.7)	30.1 (24.9-39.5)	54.6 (42.0-81.3)	84.7 (51.3-125)	678
Non-Hispanic whites	99-00*	21.3 (19.1-23.8)	20.5 (18.6-23.2)	36.4 (31.5-41.0)	67.1 (56.7-78.4)	97.7 (73.5-142)	912
	01-02	17.4 (16.2-18.6)	16.5 (15.3-17.8)	29.0 (26.6-32.2)	51.1 (46.0-60.0)	81.4 (68.1-99.0)	1216
	03-04	18.6 (17.3-20.1)	17.9 (16.7-19.8)	31.6 (27.7-37.8)	53.3 (48.2-61.5)	81.5 (64.2-108)	1088
	05-06	18.7 (17.5-19.9)	17.9 (16.3-19.5)	29.7 (27.5-32.0)	48.7 (42.2-55.4)	74.3 (58.3-94.5)	1038

*In the 1999-2000 survey period, concentrations of mono-isobutyl phthalate and mono-n-butyl phthalate were measured together and expressed as a combined value, referred to as monobutyl phthalate (MBP).

Urinary Mono-cyclohexyl phthalate (MCHP)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.70)	2541
	01-02	*	< LOD	< LOD	.400 (.300-.500)	.500 (.400-.600)	2782
	03-04	*	< LOD	< LOD	< LOD	.300 (.200-.400)	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
Age group							
6-11 years	99-00	*	< LOD	< LOD	1.00 (<LOD-1.10)	1.70 (1.00-3.80)	328
	01-02	*	< LOD	< LOD	.400 (.300-.500)	.600 (.500-.700)	393
	03-04	*	< LOD	< LOD	.300 (<LOD-.400)	.500 (.300-.500)	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
12-19 years	99-00	*	< LOD	< LOD	1.00 (<LOD-1.50)	1.70 (1.00-2.50)	752
	01-02	*	< LOD	< LOD	.400 (.300-.500)	.500 (.400-.600)	742
	03-04	*	< LOD	< LOD	.200 (<LOD-.300)	.400 (.300-.600)	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1461
	01-02	*	< LOD	< LOD	.400 (<LOD-.500)	.500 (.400-.600)	1647
	03-04	*	< LOD	< LOD	< LOD	.300 (.200-.300)	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	1.10 (<LOD-2.00)	1215
	01-02	*	< LOD	< LOD	.400 (.300-.500)	.500 (.400-.600)	1371
	03-04	*	< LOD	< LOD	< LOD	.300 (.300-.400)	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
Females	99-00	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.90)	1326
	01-02	*	< LOD	< LOD	.400 (<LOD-.400)	.500 (.400-.500)	1411
	03-04	*	< LOD	< LOD	< LOD	.300 (.200-.500)	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	814
	01-02	*	< LOD	< LOD	.400 (<LOD-.500)	.500 (.300-.700)	677
	03-04	*	< LOD	< LOD	< LOD	.300 (.200-.500)	652
	05-06	*	< LOD	< LOD	< LOD	< LOD	637
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	1.10 (.900-1.20)	603
	01-02	*	< LOD	< LOD	.400 (.300-.500)	.500 (.400-.700)	703
	03-04	*	< LOD	< LOD	.300 (.200-.300)	.400 (.300-.500)	699
	05-06	*	< LOD	< LOD	< LOD	< LOD	678
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	1.00 (<LOD-1.70)	912
	01-02	*	< LOD	< LOD	.400 (<LOD-.400)	.500 (.400-.600)	1216
	03-04	*	< LOD	< LOD	< LOD	.300 (.200-.400)	1088
	05-06	*	< LOD	< LOD	< LOD	< LOD	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.9, 0.3, 0.2, and 0.3 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mono-cyclohexyl phthalate (MCHP) (creatinine corrected)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	< LOD	3.00 (<LOD-3.33)	2541
	01-02	*	< LOD	< LOD	.610 (.530-.690)	.910 (.770-1.00)	2782
	03-04	*	< LOD	< LOD	< LOD	.450 (.400-.500)	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
Age group							
6-11 years	99-00	*	< LOD	< LOD	1.54 (<LOD-2.34)	2.82 (1.54-6.44)	328
	01-02	*	< LOD	< LOD	.690 (.510-.740)	.940 (.690-1.17)	393
	03-04	*	< LOD	< LOD	.370 (<LOD-.530)	.530 (.350-.830)	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
12-19 years	99-00	*	< LOD	< LOD	1.22 (<LOD-1.54)	1.67 (1.36-1.82)	752
	01-02	*	< LOD	< LOD	.470 (.380-.660)	.770 (.530-1.18)	742
	03-04	*	< LOD	< LOD	.220 (<LOD-.270)	.380 (.240-.620)	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1461
	01-02	*	< LOD	< LOD	.630 (<LOD-.690)	.910 (.770-1.05)	1647
	03-04	*	< LOD	< LOD	< LOD	.450 (.400-.500)	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	2.14 (<LOD-3.16)	1215
	01-02	*	< LOD	< LOD	.510 (.420-.660)	.880 (.670-1.06)	1371
	03-04	*	< LOD	< LOD	< LOD	.330 (.290-.500)	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
Females	99-00	*	< LOD	< LOD	< LOD	3.33 (<LOD-3.53)	1326
	01-02	*	< LOD	< LOD	.670 (<LOD-.770)	.910 (.800-1.10)	1411
	03-04	*	< LOD	< LOD	< LOD	.500 (.420-.590)	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	814
	01-02	*	< LOD	< LOD	.590 (<LOD-.690)	.950 (.790-1.11)	677
	03-04	*	< LOD	< LOD	< LOD	.390 (.310-.560)	652
	05-06	*	< LOD	< LOD	< LOD	< LOD	637
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	1.43 (1.12-1.74)	603
	01-02	*	< LOD	< LOD	.410 (.360-.490)	.590 (.500-710)	703
	03-04	*	< LOD	< LOD	.250 (.170-.310)	.330 (.260-.470)	699
	05-06	*	< LOD	< LOD	< LOD	< LOD	678
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	3.16 (<LOD-3.53)	912
	01-02	*	< LOD	< LOD	.630 (<LOD-.740)	.910 (.770-1.06)	1216
	03-04	*	< LOD	< LOD	< LOD	.480 (.420-.530)	1088
	05-06	*	< LOD	< LOD	< LOD	< LOD	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mono-ethyl phthalate (MEP)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	179 (156-204)	164 (136-201)	454 (370-538)	1260 (1010-1480)	2840 (2150-3770)	2536
	01-02	178 (159-199)	169 (141-194)	465 (415-527)	1230 (1040-1440)	2500 (1860-3220)	2782
	03-04	193 (169-220)	174 (151-208)	502 (457-555)	1380 (1170-1750)	2700 (2160-3310)	2605
	05-06	164 (145-186)	155 (126-183)	430 (389-490)	1140 (1070-1250)	2140 (1720-2770)	2548
Age group							
6-11 years	99-00	91.3 (74.8-111)	75.4 (62.1-93.7)	197 (129-249)	378 (290-730)	756 (379-1070)	328
	01-02	85.1 (71.2-102)	71.9 (61.9-92.5)	183 (142-217)	451 (315-636)	808 (572-1090)	393
	03-04	95.3 (82.3-110)	81.7 (70.3-103)	196 (170-241)	521 (295-571)	827 (542-1440)	342
	05-06	84.4 (69.2-103)	72.6 (58.1-93.4)	169 (112-222)	438 (263-557)	792 (494-1090)	356
12-19 years	99-00	211 (160-278)	193 (141-256)	564 (419-818)	1510 (1050-2150)	3260 (1550-4420)	752
	01-02	197 (159-243)	184 (148-227)	479 (387-651)	1260 (983-1480)	2070 (1470-3050)	742
	03-04	225 (187-270)	221 (165-294)	557 (432-695)	1250 (973-1560)	2310 (1360-3310)	729
	05-06	190 (163-222)	173 (146-202)	477 (387-591)	1160 (963-1610)	2060 (1550-2540)	702
20 years and older	99-00	190 (164-219)	180 (140-221)	482 (390-590)	1340 (1010-1660)	3480 (2230-4640)	1456
	01-02	191 (171-214)	181 (152-212)	498 (441-567)	1350 (1060-1660)	2720 (2160-3670)	1647
	03-04	205 (176-238)	188 (158-219)	533 (471-629)	1590 (1220-2070)	2980 (2250-3800)	1534
	05-06	173 (150-200)	168 (132-199)	453 (406-524)	1190 (1100-1360)	2250 (1730-3150)	1490
Gender							
Males	99-00	179 (149-215)	154 (119-197)	523 (372-650)	1440 (1020-2280)	3500 (2130-4560)	1214
	01-02	182 (157-211)	171 (139-199)	502 (419-603)	1450 (1060-2110)	3100 (2110-4390)	1371
	03-04	197 (173-224)	171 (148-201)	536 (449-654)	1520 (1210-2070)	2910 (2210-3480)	1250
	05-06	162 (140-188)	145 (115-182)	422 (344-516)	1150 (987-1300)	2220 (1400-2930)	1270
Females	99-00	178 (154-206)	174 (138-210)	425 (350-508)	988 (880-1230)	2230 (1370-3880)	1322
	01-02	174 (153-198)	167 (139-194)	427 (387-498)	1050 (879-1310)	1860 (1490-2500)	1411
	03-04	189 (160-225)	182 (138-219)	478 (392-564)	1260 (969-1640)	2590 (1800-3420)	1355
	05-06	167 (141-197)	165 (132-197)	441 (382-524)	1110 (1020-1320)	1990 (1730-2870)	1278
Race/ethnicity							
Mexican Americans	99-00	181 (157-209)	174 (146-210)	441 (390-541)	1280 (851-1510)	1720 (1460-2130)	813
	01-02	226 (195-262)	220 (190-264)	530 (444-660)	1490 (1050-2110)	2630 (1540-4460)	677
	03-04	267 (239-298)	249 (212-307)	597 (523-688)	1640 (1320-2180)	3050 (2230-4300)	652
	05-06	246 (197-307)	244 (188-282)	582 (470-706)	1570 (1030-2780)	2930 (1770-5040)	637
Non-Hispanic blacks	99-00	322 (275-377)	306 (256-350)	789 (635-949)	1890 (1410-2270)	3610 (2130-4640)	603
	01-02	352 (324-384)	357 (290-407)	853 (709-1090)	2160 (1620-2470)	3540 (2810-5070)	703
	03-04	357 (310-412)	306 (253-414)	948 (769-1150)	2500 (1840-2980)	4370 (2780-5910)	699
	05-06	332 (286-385)	302 (247-384)	792 (667-1060)	2200 (1620-2870)	3960 (2870-5450)	678
Non-Hispanic whites	99-00	152 (133-175)	134 (108-157)	367 (287-482)	986 (798-1340)	2470 (1590-3880)	908
	01-02	158 (141-178)	147 (119-177)	413 (366-451)	1020 (905-1230)	2320 (1560-2720)	1216
	03-04	167 (145-193)	148 (125-175)	418 (366-477)	1210 (954-1480)	2250 (1590-3290)	1088
	05-06	138 (122-157)	128 (105-168)	352 (297-421)	910 (758-1080)	1730 (1150-2350)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 1.2, 0.9, 0.4, and 0.8 respectively.

Urinary Mono-ethyl phthalate (MEP) (creatinine corrected)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	163 (149-178)	141 (129-157)	360 (307-422)	905 (753-1180)	1950 (1670-2310)	2536
	01-02	167 (150-185)	148 (133-162)	388 (330-435)	969 (805-1180)	1840 (1450-2200)	2782
	03-04	181 (163-202)	153 (137-177)	452 (386-504)	1110 (889-1290)	2040 (1640-2540)	2605
	05-06	160 (144-178)	140 (123-158)	367 (319-433)	947 (800-1080)	1720 (1430-1980)	2548
Age group							
6-11 years	99-00	92.6 (77.9-110)	79.6 (65.7-110)	165 (127-208)	341 (219-554)	625 (400-784)	328
	01-02	96.9 (82.5-114)	81.2 (66.3-105)	177 (135-224)	512 (290-802)	843 (512-1320)	393
	03-04	101 (87.0-117)	87.0 (66.5-113)	180 (145-203)	470 (310-596)	719 (470-1330)	342
	05-06	92.9 (75.2-115)	75.9 (64.7-92.5)	161 (115-220)	422 (253-668)	776 (555-1830)	356
12-19 years	99-00	142 (119-169)	122 (93.0-156)	364 (275-495)	879 (676-1260)	1760 (1000-2000)	752
	01-02	152 (126-184)	140 (111-180)	330 (249-409)	808 (590-1100)	1330 (868-1840)	742
	03-04	168 (141-201)	150 (123-184)	363 (292-485)	791 (589-1080)	1470 (987-2220)	729
	05-06	142 (122-165)	129 (105-158)	304 (264-361)	757 (589-962)	1230 (894-1680)	702
20 years and older	99-00	179 (161-199)	154 (136-177)	390 (336-452)	1010 (803-1460)	2170 (1790-3350)	1456
	01-02	181 (164-200)	160 (146-182)	419 (363-486)	1060 (884-1320)	2120 (1520-2790)	1647
	03-04	197 (174-223)	177 (147-202)	512 (423-632)	1230 (989-1610)	2290 (1770-3200)	1534
	05-06	174 (156-194)	152 (133-177)	421 (353-468)	1060 (870-1220)	1860 (1470-2330)	1490
Gender							
Males	99-00	141 (124-159)	120 (107-134)	324 (249-415)	1000 (693-1480)	1950 (1460-2900)	1214
	01-02	148 (130-168)	126 (110-147)	352 (282-425)	1100 (839-1480)	2120 (1490-3030)	1371
	03-04	154 (139-171)	127 (108-150)	390 (341-465)	1070 (852-1360)	2000 (1610-2410)	1250
	05-06	130 (114-148)	111 (92.5-137)	309 (260-350)	764 (558-1020)	1360 (919-1890)	1270
Females	99-00	187 (165-211)	158 (142-179)	377 (307-495)	822 (697-1170)	1930 (1170-3410)	1322
	01-02	187 (166-210)	171 (148-188)	407 (355-473)	860 (712-1100)	1430 (1190-2010)	1411
	03-04	211 (180-248)	181 (148-217)	508 (379-634)	1120 (889-1400)	2250 (1440-3330)	1355
	05-06	196 (175-219)	160 (148-183)	445 (375-504)	1150 (954-1390)	2080 (1740-2620)	1278
Race/ethnicity							
Mexican Americans	99-00	164 (142-190)	154 (136-174)	382 (314-472)	814 (673-974)	1330 (974-1920)	813
	01-02	213 (182-249)	199 (164-242)	461 (396-572)	1080 (860-1650)	1940 (1410-2630)	677
	03-04	241 (213-271)	233 (202-270)	533 (417-665)	1230 (956-1610)	2270 (1810-3140)	652
	05-06	222 (187-263)	189 (163-238)	490 (355-644)	1160 (909-1540)	2130 (1400-3800)	637
Non-Hispanic blacks	99-00	208 (183-236)	196 (166-228)	443 (390-505)	1030 (762-1700)	1920 (1230-2590)	603
	01-02	247 (226-271)	227 (185-270)	557 (478-618)	1240 (961-1480)	2090 (1550-2800)	703
	03-04	254 (225-287)	212 (188-246)	619 (476-791)	1530 (1200-1970)	2590 (2160-3500)	699
	05-06	233 (199-273)	202 (171-243)	546 (471-624)	1390 (894-1950)	2580 (1620-3070)	678
Non-Hispanic whites	99-00	149 (135-165)	128 (111-142)	313 (239-387)	856 (655-1390)	1950 (1480-2740)	908
	01-02	157 (142-173)	136 (124-150)	338 (288-402)	919 (712-1160)	1590 (1320-2170)	1216
	03-04	165 (144-189)	135 (120-158)	386 (338-485)	989 (831-1330)	1920 (1400-2780)	1088
	05-06	146 (131-162)	128 (108-148)	319 (287-367)	807 (682-1040)	1500 (1250-1880)	1038

Urinary Mono-2-ethylhexyl phthalate (MEHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	3.43 (3.19-3.69)	3.20 (3.00-3.60)	7.60 (6.80-8.40)	14.9 (13.5-17.4)	23.8 (19.2-28.6)	2541
	01-02	4.27 (3.80-4.79)	4.20 (3.70-4.90)	9.80 (8.40-11.6)	23.0 (19.1-27.9)	39.2 (31.8-50.0)	2782
	03-04	2.34 (2.10-2.62)	1.90 (1.70-2.40)	5.30 (4.50-6.60)	15.1 (11.4-20.6)	31.0 (21.4-42.0)	2605
	05-06	3.04 (2.78-3.32)	2.50 (2.10-2.80)	6.30 (5.70-7.10)	17.7 (14.0-22.5)	39.7 (28.6-52.1)	2548
Age group							
6-11 years	99-00	5.12 (4.42-5.92)	4.90 (3.70-6.40)	11.1 (8.30-13.6)	19.0 (13.8-36.1)	35.3 (15.6-130)	328
	01-02	4.41 (3.90-5.00)	4.40 (4.10-5.30)	9.30 (7.90-11.7)	19.7 (14.6-25.9)	31.4 (21.8-47.9)	393
	03-04	2.84 (2.10-3.84)	2.70 (1.80-4.10)	6.40 (4.40-9.60)	13.9 (7.80-27.6)	27.6 (11.3-64.7)	342
	05-06	3.10 (2.78-3.47)	3.00 (2.60-3.30)	6.20 (5.10-7.10)	14.1 (9.40-19.3)	19.7 (14.7-36.6)	356
12-19 years	99-00	3.75 (3.24-4.35)	3.70 (2.90-4.60)	8.10 (6.40-9.40)	15.3 (11.4-20.5)	22.8 (19.1-29.2)	752
	01-02	4.57 (3.96-5.27)	4.50 (3.70-5.10)	11.0 (9.50-14.4)	23.0 (17.7-32.7)	42.5 (25.9-57.5)	742
	03-04	2.77 (2.25-3.41)	2.50 (2.00-3.00)	6.40 (4.50-8.60)	18.6 (10.2-35.6)	40.6 (20.7-58.4)	729
	05-06	3.72 (3.04-4.56)	3.20 (2.40-4.10)	8.80 (6.20-13.3)	22.6 (13.8-43.4)	48.7 (23.1-62.9)	702
20 years and older	99-00	3.21 (2.94-3.51)	3.00 (2.70-3.40)	7.30 (6.40-8.00)	14.5 (12.1-17.0)	22.7 (17.5-27.0)	1461
	01-02	4.20 (3.63-4.86)	4.10 (3.50-5.00)	9.50 (8.10-11.9)	23.5 (18.0-29.8)	39.5 (30.3-57.1)	1647
	03-04	2.23 (2.03-2.44)	1.70 (1.50-2.00)	5.10 (4.50-6.00)	15.1 (10.9-19.7)	29.5 (20.4-40.0)	1534
	05-06	2.94 (2.68-3.21)	2.30 (1.90-2.70)	6.20 (5.60-6.70)	17.7 (13.6-24.5)	41.5 (28.6-54.1)	1490
Gender							
Males	99-00	3.68 (3.31-4.10)	3.40 (2.90-3.90)	8.00 (7.40-8.80)	16.0 (14.0-19.0)	25.3 (19.5-36.7)	1215
	01-02	4.31 (3.84-4.83)	4.30 (3.70-5.10)	9.70 (8.30-11.2)	23.0 (16.9-29.8)	37.9 (29.9-48.4)	1371
	03-04	2.56 (2.26-2.90)	2.20 (1.70-2.60)	6.00 (4.60-7.70)	17.2 (11.3-26.3)	33.3 (24.9-55.5)	1250
	05-06	3.40 (3.01-3.85)	2.80 (2.40-3.30)	7.00 (5.70-9.00)	22.6 (15.0-35.8)	49.8 (35.2-67.4)	1270
Females	99-00	3.21 (2.91-3.54)	3.10 (2.80-3.50)	7.10 (5.90-8.50)	13.6 (12.1-17.2)	21.9 (15.6-28.5)	1326
	01-02	4.23 (3.67-4.86)	4.10 (3.50-5.00)	9.80 (8.40-12.2)	23.0 (19.5-28.4)	43.5 (31.4-53.7)	1411
	03-04	2.15 (1.92-2.42)	1.80 (1.50-2.10)	4.90 (4.10-5.70)	13.2 (10.0-18.1)	27.8 (17.5-40.7)	1355
	05-06	2.72 (2.49-2.98)	2.10 (1.90-2.40)	6.00 (5.20-6.80)	13.9 (11.7-17.5)	30.8 (21.9-36.2)	1278
Race/ethnicity							
Mexican Americans	99-00	3.49 (3.16-3.85)	3.50 (3.10-3.90)	7.00 (5.70-8.60)	13.3 (10.7-18.7)	23.9 (17.4-27.3)	814
	01-02	4.32 (3.75-4.98)	4.70 (3.80-5.70)	10.1 (8.50-11.4)	19.6 (16.6-23.0)	28.5 (24.2-39.9)	677
	03-04	2.35 (1.87-2.96)	2.20 (1.50-3.00)	5.10 (4.30-6.60)	11.2 (7.50-16.5)	18.5 (11.6-38.2)	652
	05-06	2.99 (2.50-3.57)	2.30 (1.70-3.30)	5.70 (4.70-7.60)	18.4 (12.1-30.6)	36.4 (26.2-63.8)	637
Non-Hispanic blacks	99-00	4.82 (3.92-5.93)	5.20 (4.10-5.80)	9.50 (7.60-11.4)	19.5 (12.9-26.5)	29.5 (18.6-60.3)	603
	01-02	6.60 (5.57-7.82)	6.70 (5.40-8.10)	15.4 (13.0-18.7)	32.9 (26.5-41.4)	52.6 (41.0-84.0)	703
	03-04	3.61 (3.07-4.23)	3.50 (3.00-4.00)	8.50 (7.10-11.4)	22.9 (16.5-28.6)	35.2 (29.3-49.1)	699
	05-06	4.09 (3.51-4.75)	3.70 (3.10-4.10)	9.10 (6.90-11.9)	22.5 (17.4-40.7)	59.3 (34.5-86.7)	678
Non-Hispanic whites	99-00	3.16 (2.89-3.46)	2.80 (2.50-3.10)	7.40 (6.30-8.40)	14.5 (12.2-17.4)	22.4 (16.9-28.5)	912
	01-02	3.85 (3.37-4.40)	3.70 (3.10-4.40)	8.70 (7.80-9.90)	20.9 (17.3-25.9)	37.9 (29.9-49.5)	1216
	03-04	2.14 (1.92-2.39)	1.70 (1.40-1.90)	4.80 (4.00-5.80)	13.6 (9.50-20.0)	31.0 (18.1-48.9)	1088
	05-06	2.83 (2.59-3.10)	2.20 (1.80-2.60)	5.90 (5.30-6.90)	17.0 (13.3-21.6)	36.3 (26.6-51.0)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 1.2, 1.0, 0.9, and 1.2 respectively.

Urinary Mono-2-ethylhexyl phthalate (MEHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	3.12 (2.95-3.31)	3.08 (2.82-3.27)	5.88 (5.38-6.25)	10.8 (9.62-12.5)	18.9 (15.0-21.8)	2541
	01-02	4.00 (3.58-4.48)	3.90 (3.44-4.47)	7.94 (7.22-9.02)	18.0 (15.3-21.5)	32.8 (25.2-42.9)	2782
	03-04	2.20 (2.01-2.41)	1.89 (1.68-2.19)	4.31 (3.84-4.74)	10.8 (8.72-13.8)	25.4 (16.7-34.7)	2605
	05-06	2.96 (2.72-3.23)	2.61 (2.37-2.86)	5.69 (5.00-6.47)	13.7 (11.4-17.8)	30.1 (21.2-35.2)	2548
Age group							
6-11 years	99-00	5.19 (4.55-5.93)	5.37 (4.52-5.95)	9.11 (8.06-11.4)	21.6 (11.5-41.9)	41.9 (13.5-86.2)	328
	01-02	5.03 (4.47-5.65)	5.38 (4.51-6.21)	9.90 (7.87-11.5)	21.1 (13.8-28.8)	31.4 (24.3-40.7)	393
	03-04	3.00 (2.30-3.93)	2.80 (1.93-4.09)	5.86 (4.69-7.70)	14.3 (8.54-24.4)	28.7 (14.1-45.3)	342
	05-06	3.42 (3.08-3.79)	3.26 (2.63-3.92)	6.18 (5.40-6.85)	11.3 (8.96-17.4)	20.7 (11.3-31.8)	356
12-19 years	99-00	2.53 (2.14-2.99)	2.35 (2.05-2.76)	5.83 (4.38-6.29)	9.66 (7.41-11.5)	12.1 (10.5-17.3)	752
	01-02	3.53 (3.09-4.03)	3.67 (2.89-4.48)	7.47 (6.51-8.67)	15.2 (11.7-21.9)	25.2 (17.7-32.8)	742
	03-04	2.07 (1.74-2.48)	1.88 (1.60-2.23)	4.25 (3.19-5.62)	11.6 (6.83-23.2)	24.8 (11.6-37.9)	729
	05-06	2.77 (2.27-3.38)	2.43 (2.03-2.87)	5.24 (4.06-7.75)	15.2 (9.86-23.2)	27.1 (16.0-43.7)	702
20 years and older	99-00	3.03 (2.83-3.25)	2.98 (2.73-3.23)	5.55 (4.90-6.06)	10.0 (8.60-12.9)	17.5 (13.8-22.1)	1461
	01-02	3.97 (3.49-4.52)	3.82 (3.26-4.38)	7.79 (7.00-9.00)	18.3 (15.3-21.8)	34.5 (23.1-47.9)	1647
	03-04	2.14 (1.98-2.31)	1.84 (1.63-2.08)	4.14 (3.78-4.40)	10.5 (8.38-12.9)	25.6 (15.9-36.3)	1534
	05-06	2.94 (2.69-3.23)	2.60 (2.36-2.83)	5.67 (4.77-6.52)	13.8 (11.3-18.1)	33.1 (21.9-47.4)	1490
Gender							
Males	99-00	2.89 (2.60-3.22)	2.76 (2.52-2.96)	5.58 (4.71-6.08)	10.3 (9.35-12.4)	21.6 (14.1-27.7)	1215
	01-02	3.50 (3.08-3.99)	3.33 (2.83-3.90)	7.00 (6.49-7.77)	16.2 (12.8-20.9)	31.6 (20.5-49.4)	1371
	03-04	2.01 (1.82-2.21)	1.71 (1.46-1.89)	4.14 (3.49-4.81)	10.4 (7.68-16.2)	23.3 (15.1-41.1)	1250
	05-06	2.73 (2.43-3.07)	2.30 (2.12-2.61)	5.08 (4.29-6.14)	14.3 (11.2-20.5)	31.0 (21.5-50.9)	1270
Females	99-00	3.36 (3.11-3.63)	3.33 (2.91-3.80)	6.15 (5.55-6.77)	11.1 (9.11-14.0)	17.3 (12.4-24.6)	1326
	01-02	4.54 (4.02-5.13)	4.47 (3.85-5.14)	9.28 (7.94-10.3)	20.3 (16.6-24.4)	34.7 (27.1-42.0)	1411
	03-04	2.40 (2.15-2.69)	2.16 (1.84-2.40)	4.40 (3.97-4.89)	10.9 (8.27-16.0)	27.0 (17.5-34.6)	1355
	05-06	3.20 (2.89-3.55)	2.89 (2.58-3.17)	6.07 (5.00-7.00)	13.3 (10.4-16.3)	28.2 (18.2-37.4)	1278
Race/ethnicity							
Mexican Americans	99-00	3.16 (2.72-3.68)	3.15 (2.52-3.81)	5.88 (4.86-7.24)	11.6 (9.63-13.1)	15.7 (12.6-23.1)	814
	01-02	4.07 (3.60-4.61)	4.18 (3.82-4.90)	7.80 (6.64-9.49)	16.4 (13.6-18.9)	24.9 (19.8-28.7)	677
	03-04	2.12 (1.74-2.59)	1.94 (1.50-2.42)	4.06 (3.29-4.93)	9.38 (5.72-15.4)	16.8 (9.86-38.6)	652
	05-06	2.69 (2.36-3.07)	2.41 (2.04-2.73)	4.82 (4.09-6.05)	14.3 (10.0-16.9)	27.2 (16.3-40.1)	637
Non-Hispanic blacks	99-00	3.11 (2.59-3.73)	3.13 (2.50-3.61)	5.84 (4.43-7.32)	10.2 (8.05-15.6)	18.4 (11.6-35.2)	603
	01-02	4.63 (3.96-5.42)	4.59 (3.97-5.02)	9.93 (7.95-12.4)	21.2 (16.0-33.2)	39.9 (27.7-48.1)	703
	03-04	2.56 (2.24-2.92)	2.28 (2.02-2.78)	5.17 (4.48-6.83)	13.2 (10.5-16.2)	27.5 (18.4-36.0)	699
	05-06	2.87 (2.45-3.38)	2.41 (2.09-2.78)	5.72 (4.40-7.29)	15.0 (12.0-20.6)	54.4 (18.4-84.0)	678
Non-Hispanic whites	99-00	3.09 (2.84-3.36)	3.08 (2.73-3.47)	5.87 (5.11-6.67)	10.6 (8.95-13.5)	20.0 (14.0-24.6)	912
	01-02	3.81 (3.34-4.35)	3.67 (3.11-4.33)	7.78 (6.74-9.35)	17.0 (14.1-21.8)	32.8 (21.5-46.9)	1216
	03-04	2.12 (1.91-2.35)	1.82 (1.60-2.13)	4.11 (3.49-4.42)	10.7 (7.42-15.1)	27.0 (15.1-37.4)	1088
	05-06	2.98 (2.77-3.21)	2.66 (2.43-2.93)	5.73 (5.00-6.47)	13.4 (11.3-17.8)	27.7 (19.5-37.4)	1038

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	20.0 (17.8-22.5)	20.1 (17.8-22.4)	43.6 (38.0-49.7)	92.3 (77.0-108)	192 (131-256)	2782
	03-04	21.7 (19.3-24.4)	21.2 (18.7-24.1)	49.1 (40.5-56.9)	121 (91.3-164)	266 (165-383)	2605
	05-06	25.5 (23.0-28.2)	23.8 (21.5-26.8)	55.1 (50.2-61.0)	153 (132-180)	306 (240-421)	2548
Age group							
6-11 years	01-02	33.6 (29.7-37.9)	32.9 (26.9-39.1)	66.9 (49.7-74.0)	127 (103-148)	216 (137-280)	393
	03-04	36.9 (28.4-47.9)	36.5 (26.5-47.0)	77.4 (49.1-103)	164 (79.9-350)	318 (164-400)	342
	05-06	34.9 (30.8-39.6)	35.7 (31.3-40.7)	68.9 (56.5-76.0)	140 (101-169)	206 (133-401)	356
12-19 years	01-02	24.9 (21.3-29.1)	25.3 (22.9-31.3)	50.6 (40.7-64.5)	107 (78.5-148)	216 (117-330)	742
	03-04	28.3 (23.0-34.8)	29.8 (25.9-33.9)	56.9 (45.4-73.7)	157 (84.1-299)	317 (176-553)	729
	05-06	34.8 (28.0-43.3)	32.5 (27.1-42.2)	79.5 (66.9-103)	213 (131-384)	424 (232-836)	702
20 years and older	01-02	18.1 (15.7-20.9)	17.8 (14.7-20.7)	39.8 (32.7-48.0)	86.2 (65.7-107)	175 (110-279)	1647
	03-04	19.5 (17.7-21.5)	18.4 (16.6-21.0)	41.9 (36.9-51.2)	107 (88.2-136)	225 (148-384)	1534
	05-06	23.4 (21.1-25.9)	21.4 (19.5-23.7)	48.6 (43.7-55.1)	148 (121-172)	306 (238-421)	1490
Gender							
Males	01-02	22.0 (19.5-24.7)	21.2 (19.4-24.2)	48.0 (41.4-54.4)	94.2 (80.8-110)	212 (130-256)	1371
	03-04	24.1 (20.9-27.9)	22.9 (19.2-27.9)	51.0 (40.5-59.8)	133 (94.8-220)	317 (162-470)	1250
	05-06	29.6 (26.0-33.8)	27.2 (22.9-31.0)	63.1 (54.3-71.9)	180 (143-263)	494 (285-626)	1270
Females	01-02	18.3 (15.7-21.4)	18.2 (14.9-22.1)	39.8 (34.3-46.0)	86.0 (69.4-115)	170 (119-273)	1411
	03-04	19.7 (17.4-22.2)	19.4 (16.7-22.8)	46.4 (37.5-54.4)	103 (84.1-148)	214 (140-318)	1355
	05-06	22.0 (19.2-25.2)	21.4 (19.5-23.4)	47.1 (42.6-54.3)	135 (113-156)	232 (186-300)	1278
Race/ethnicity							
Mexican Americans	01-02	18.5 (16.2-21.1)	19.1 (16.3-21.6)	36.3 (31.6-44.0)	79.9 (66.4-93.9)	123 (100-161)	677
	03-04	18.9 (15.4-23.4)	19.8 (17.6-22.3)	37.5 (30.0-45.6)	72.2 (52.4-115)	116 (71.6-327)	652
	05-06	23.0 (18.0-29.3)	19.9 (15.7-23.9)	47.8 (34.8-65.3)	136 (84.6-223)	244 (157-520)	637
Non-Hispanic blacks	01-02	29.8 (26.1-34.1)	30.9 (27.2-34.3)	61.9 (52.6-69.4)	126 (108-157)	276 (157-339)	703
	03-04	30.8 (26.8-35.5)	29.1 (25.3-32.3)	65.6 (53.7-76.3)	154 (113-178)	275 (174-401)	699
	05-06	34.8 (30.3-39.9)	30.2 (27.6-33.2)	73.8 (61.0-96.7)	206 (156-275)	395 (274-547)	678
Non-Hispanic whites	01-02	19.1 (16.7-21.9)	19.2 (16.9-21.4)	41.7 (35.3-50.7)	91.1 (75.6-110)	212 (130-275)	1216
	03-04	20.8 (18.6-23.3)	19.7 (17.2-22.5)	47.5 (39.4-56.1)	120 (91.3-165)	270 (155-403)	1088
	05-06	24.3 (21.9-26.9)	23.0 (21.1-26.0)	54.6 (48.4-61.0)	148 (121-172)	302 (221-421)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 1.0, 0.3, and 0.7.

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	18.8 (17.0-20.7)	16.6 (14.9-18.5)	32.2 (27.8-37.1)	71.1 (58.7-88.3)	143 (101-200)	2782
	03-04	20.4 (18.7-22.3)	17.7 (16.3-19.6)	35.8 (30.5-43.3)	93.5 (74.0-128)	182 (134-262)	2605
	05-06	24.8 (22.4-27.5)	21.4 (19.1-23.4)	46.1 (40.0-52.1)	117 (97.8-148)	235 (197-272)	2548
Age group							
6-11 years	01-02	38.2 (34.3-42.6)	34.3 (29.9-38.9)	60.6 (51.9-76.4)	107 (96.3-147)	211 (122-313)	393
	03-04	39.0 (31.1-48.9)	36.6 (25.3-49.3)	65.6 (49.8-91.3)	129 (77.1-253)	211 (123-708)	342
	05-06	38.5 (34.2-43.3)	37.0 (32.9-40.3)	65.5 (55.4-71.9)	115 (85.1-165)	213 (119-333)	356
12-19 years	01-02	19.2 (17.0-21.8)	17.8 (15.6-20.0)	34.9 (29.2-42.7)	73.4 (58.4-80.7)	102 (86.6-160)	742
	03-04	21.2 (18.1-24.7)	18.6 (16.9-21.7)	38.7 (29.7-53.4)	103 (62.7-209)	212 (100-358)	729
	05-06	26.0 (21.2-31.7)	23.7 (18.8-28.4)	49.4 (37.4-74.0)	131 (79.0-228)	278 (132-375)	702
20 years and older	01-02	17.1 (15.2-19.3)	15.0 (13.3-16.7)	27.7 (23.2-34.0)	63.7 (48.3-86.9)	137 (84.4-203)	1647
	03-04	18.8 (17.5-20.2)	16.3 (15.4-17.5)	31.6 (28.1-35.3)	83.8 (67.2-106)	171 (129-246)	1534
	05-06	23.4 (21.1-26.0)	19.4 (17.6-21.8)	42.5 (37.6-49.2)	115 (93.1-153)	235 (184-298)	1490
Gender							
Males	01-02	17.9 (16.2-19.7)	15.4 (13.8-17.9)	32.2 (27.8-36.8)	73.4 (55.3-91.8)	137 (97.7-224)	1371
	03-04	18.9 (17.1-20.9)	17.1 (15.2-18.6)	32.7 (26.6-41.6)	93.4 (68.8-123)	193 (108-291)	1250
	05-06	23.8 (21.0-26.9)	20.2 (17.5-23.3)	44.8 (38.5-54.1)	129 (92.5-166)	251 (202-352)	1270
Females	01-02	19.7 (17.3-22.4)	17.6 (15.4-19.5)	32.1 (26.8-38.6)	70.5 (57.8-93.7)	156 (93.7-201)	1411
	03-04	21.9 (19.7-24.5)	18.7 (16.8-20.9)	39.3 (33.8-46.9)	94.3 (72.8-136)	171 (146-261)	1355
	05-06	25.9 (23.2-28.8)	22.5 (19.6-25.5)	47.3 (40.5-52.3)	108 (88.8-131)	202 (157-278)	1278
Race/ethnicity							
Mexican Americans	01-02	17.4 (15.9-19.1)	15.7 (14.4-17.5)	30.6 (26.0-34.7)	65.9 (50.6-83.9)	103 (75.5-128)	677
	03-04	17.1 (14.3-20.4)	15.4 (13.2-17.7)	29.3 (23.8-36.8)	57.3 (45.7-97.6)	105 (70.1-195)	652
	05-06	20.7 (17.2-25.0)	17.5 (15.3-21.3)	37.3 (30.9-45.7)	99.9 (67.6-159)	181 (110-357)	637
Non-Hispanic blacks	01-02	20.9 (18.8-23.3)	19.7 (17.5-21.8)	38.3 (32.1-46.0)	93.5 (69.2-123)	164 (130-183)	703
	03-04	21.9 (20.1-23.8)	19.5 (17.3-22.6)	40.1 (35.8-45.3)	102 (75.5-122)	164 (133-269)	699
	05-06	24.5 (21.2-28.2)	18.9 (17.1-22.8)	46.1 (37.9-59.7)	128 (100-158)	308 (158-399)	678
Non-Hispanic whites	01-02	18.9 (17.0-21.0)	16.3 (14.8-18.4)	32.1 (27.3-37.3)	70.8 (56.9-93.7)	177 (98.0-242)	1216
	03-04	20.5 (18.5-22.8)	17.8 (16.2-19.7)	35.3 (29.7-44.9)	96.2 (75.8-136)	211 (136-283)	1088
	05-06	25.6 (23.1-28.2)	22.4 (19.6-24.5)	47.6 (40.7-54.1)	119 (98.2-148)	231 (181-297)	1038

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	13.5 (12.0-15.0)	14.0 (12.5-15.1)	29.6 (25.2-34.0)	59.9 (50.4-70.9)	120 (87.2-156)	2782
	03-04	14.5 (13.0-16.1)	14.4 (12.4-16.7)	31.4 (27.4-36.6)	76.7 (59.4-102)	157 (106-232)	2605
	05-06	16.2 (14.6-18.0)	15.1 (13.5-17.1)	35.5 (32.1-40.3)	94.8 (78.5-112)	183 (147-250)	2548
Age group							
6-11 years	01-02	23.3 (20.9-26.1)	22.9 (18.5-28.1)	46.5 (38.1-52.0)	81.6 (64.7-109)	142 (93.9-178)	393
	03-04	25.1 (19.6-32.3)	25.8 (19.3-31.4)	51.1 (32.1-76.5)	97.9 (58.8-197)	197 (97.6-261)	342
	05-06	23.0 (20.3-26.1)	24.5 (19.9-27.6)	44.3 (38.1-52.3)	83.8 (63.6-115)	126 (77.3-253)	356
12-19 years	01-02	17.5 (15.1-20.3)	18.6 (16.2-20.7)	35.0 (27.7-42.1)	70.7 (52.2-104)	118 (74.0-174)	742
	03-04	19.5 (16.0-23.7)	20.3 (18.4-23.5)	37.8 (32.6-44.6)	110 (54.6-168)	212 (103-326)	729
	05-06	23.0 (18.7-28.4)	22.1 (18.0-26.2)	50.7 (42.7-62.2)	134 (82.3-240)	263 (134-511)	702
20 years and older	01-02	12.0 (10.5-13.9)	12.3 (10.4-14.1)	26.0 (21.6-32.1)	52.3 (41.8-68.3)	116 (74.9-160)	1647
	03-04	12.9 (11.8-14.1)	12.4 (10.9-14.5)	27.0 (25.0-30.9)	68.9 (55.0-86.5)	139 (92.7-216)	1534
	05-06	14.7 (13.2-16.4)	13.4 (12.2-15.1)	31.9 (28.2-36.2)	91.6 (74.6-104)	182 (138-247)	1490
Gender							
Males	01-02	14.5 (13.0-16.2)	14.6 (13.1-16.2)	31.6 (25.6-34.7)	60.4 (52.3-71.4)	129 (84.4-167)	1371
	03-04	15.6 (13.6-17.9)	14.7 (12.7-18.1)	31.8 (27.2-39.5)	83.8 (59.4-134)	185 (96.2-277)	1250
	05-06	18.3 (16.0-20.9)	16.3 (14.7-19.7)	39.3 (33.4-48.1)	104 (80.7-140)	258 (180-337)	1270
Females	01-02	12.5 (10.8-14.6)	13.1 (11.2-15.0)	28.1 (23.7-33.5)	57.5 (45.8-72.7)	115 (81.8-147)	1411
	03-04	13.4 (11.9-15.1)	13.7 (11.4-16.4)	29.5 (26.1-36.6)	68.6 (53.7-88.1)	143 (88.2-210)	1355
	05-06	14.4 (12.6-16.5)	13.8 (12.5-15.7)	32.5 (29.3-36.4)	81.7 (68.6-104)	159 (114-182)	1278
Race/ethnicity							
Mexican Americans	01-02	13.1 (11.6-14.9)	13.4 (11.6-15.0)	25.5 (21.6-30.8)	56.6 (40.6-70.3)	77.3 (70.5-101)	677
	03-04	12.8 (10.5-15.5)	13.6 (11.4-15.6)	25.3 (20.4-29.9)	46.6 (32.3-70.8)	76.0 (51.6-153)	652
	05-06	14.8 (11.7-18.8)	12.8 (10.5-16.1)	30.9 (22.6-42.9)	79.1 (51.7-131)	152 (92.9-276)	637
Non-Hispanic blacks	01-02	19.6 (17.1-22.5)	20.1 (17.9-22.4)	39.0 (34.8-44.2)	80.5 (71.4-97.4)	153 (102-228)	703
	03-04	20.2 (17.7-23.0)	20.1 (17.0-22.5)	40.0 (33.9-46.9)	92.6 (68.8-130)	173 (104-247)	699
	05-06	21.8 (18.9-25.2)	18.8 (16.8-21.0)	46.0 (38.0-59.1)	130 (104-168)	243 (159-304)	678
Non-Hispanic whites	01-02	12.8 (11.2-14.6)	13.2 (11.6-14.6)	28.5 (23.6-34.0)	58.6 (48.8-70.9)	126 (83.7-172)	1216
	03-04	13.8 (12.4-15.4)	13.4 (11.3-16.3)	31.0 (27.0-36.3)	77.6 (59.4-102)	161 (98.7-241)	1088
	05-06	15.5 (13.9-17.3)	15.0 (13.3-16.5)	35.3 (30.1-40.8)	92.6 (74.6-111)	182 (134-247)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 1.1, 0.5, and 0.7.

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	12.6 (11.5-13.9)	11.2 (10.2-12.3)	21.3 (18.3-23.8)	45.2 (37.1-58.1)	87.0 (68.0-124)	2782
	03-04	13.6 (12.4-14.8)	12.1 (11.0-12.9)	24.3 (20.9-27.8)	63.0 (47.8-75.8)	118 (94.1-153)	2605
	05-06	15.8 (14.2-17.5)	13.5 (12.4-14.7)	28.9 (26.0-33.8)	77.7 (62.4-91.1)	144 (118-172)	2548
Age group							
6-11 years	01-02	26.6 (24.0-29.4)	22.8 (20.3-25.0)	43.3 (33.6-47.1)	74.7 (69.0-91.9)	131 (83.0-183)	393
	03-04	26.6 (21.4-33.0)	25.3 (17.8-32.4)	43.6 (34.2-63.2)	77.1 (63.0-118)	121 (76.3-435)	342
	05-06	25.4 (22.5-28.6)	24.4 (21.4-26.4)	42.7 (36.0-46.9)	70.4 (52.8-117)	136 (77.2-195)	356
12-19 years	01-02	13.5 (12.0-15.2)	12.0 (10.8-14.3)	23.4 (20.0-28.5)	48.4 (39.2-54.9)	70.5 (55.0-97.2)	742
	03-04	14.6 (12.6-16.9)	12.7 (11.6-14.4)	25.5 (20.7-33.8)	67.9 (42.3-143)	153 (61.8-209)	729
	05-06	17.2 (14.1-20.9)	15.3 (12.5-18.6)	32.5 (25.7-41.3)	84.2 (49.1-147)	163 (93.1-250)	702
20 years and older	01-02	11.4 (10.2-12.8)	10.1 (8.89-11.4)	17.5 (15.2-21.8)	38.4 (30.5-52.5)	84.3 (53.3-128)	1647
	03-04	12.4 (11.5-13.3)	11.0 (10.0-12.0)	20.9 (18.6-22.8)	53.9 (40.7-70.2)	109 (88.6-130)	1534
	05-06	14.8 (13.3-16.4)	12.4 (11.2-13.5)	26.7 (23.8-31.3)	76.3 (61.0-89.9)	144 (106-170)	1490
Gender							
Males	01-02	11.8 (10.7-13.0)	10.2 (8.93-11.7)	21.2 (18.5-23.3)	46.1 (35.3-58.7)	84.2 (69.6-104)	1371
	03-04	12.3 (11.1-13.5)	11.1 (10.0-12.0)	21.6 (17.6-26.9)	59.1 (45.4-72.0)	120 (72.0-162)	1250
	05-06	14.7 (12.9-16.7)	12.6 (10.9-14.3)	27.1 (23.3-35.6)	79.5 (59.6-96.9)	147 (120-190)	1270
Females	01-02	13.5 (11.9-15.2)	12.0 (10.8-13.7)	21.5 (18.0-25.6)	44.8 (36.8-61.6)	92.3 (61.0-139)	1411
	03-04	14.9 (13.4-16.7)	12.7 (11.4-14.2)	26.6 (21.8-30.6)	65.6 (48.0-90.1)	118 (97.0-157)	1355
	05-06	16.9 (15.1-19.0)	14.7 (13.2-16.5)	30.3 (26.6-34.7)	76.4 (57.6-97.2)	137 (106-170)	1278
Race/ethnicity							
Mexican Americans	01-02	12.4 (11.4-13.5)	11.0 (10.5-12.3)	20.9 (18.5-24.4)	44.6 (33.4-56.2)	65.9 (53.1-83.1)	677
	03-04	11.5 (9.81-13.6)	10.7 (9.04-12.3)	18.8 (15.6-24.6)	39.1 (31.8-53.9)	63.0 (47.2-121)	652
	05-06	13.3 (11.1-16.1)	11.4 (9.58-13.6)	24.0 (19.4-30.4)	61.2 (45.6-85.9)	102 (69.9-200)	637
Non-Hispanic blacks	01-02	13.8 (12.3-15.4)	13.1 (12.0-14.2)	23.9 (20.0-29.3)	58.3 (45.3-79.7)	101 (81.3-124)	703
	03-04	14.3 (13.1-15.6)	13.3 (11.3-15.5)	24.8 (21.7-27.7)	61.2 (46.8-76.6)	105 (79.7-152)	699
	05-06	15.3 (13.2-17.8)	11.6 (9.87-14.6)	29.1 (24.7-38.5)	77.1 (61.9-113)	172 (99.8-251)	678
Non-Hispanic whites	01-02	12.7 (11.4-14.0)	11.1 (9.90-12.3)	20.8 (18.0-23.9)	45.7 (35.9-64.9)	96.0 (68.5-161)	1216
	03-04	13.7 (12.2-15.3)	12.0 (10.5-12.9)	24.9 (20.7-28.6)	69.5 (51.4-95.3)	124 (90.3-182)	1088
	05-06	16.3 (14.8-18.0)	14.0 (12.9-15.7)	30.8 (27.3-34.8)	79.3 (66.0-93.8)	139 (117-163)	1038

Urinary Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	34.7 (31.0-38.9)	33.0 (29.1-37.4)	71.8 (61.7-84.8)	168 (133-240)	339 (235-506)	2605
	05-06	38.6 (34.7-42.9)	35.6 (31.1-40.3)	79.7 (70.9-92.9)	211 (180-246)	386 (311-484)	2548
Age group							
6-11 years	03-04	58.2 (44.7-75.6)	51.6 (39.2-67.6)	112 (71.4-182)	314 (124-524)	391 (238-781)	342
	05-06	57.4 (50.2-65.7)	53.5 (42.7-67.2)	94.7 (83.2-108)	200 (154-247)	297 (196-548)	356
12-19 years	03-04	44.6 (36.8-54.0)	42.7 (38.4-47.6)	86.5 (67.3-108)	220 (120-397)	448 (235-808)	729
	05-06	52.9 (43.0-65.2)	46.7 (39.4-61.6)	114 (85.6-173)	314 (195-515)	560 (324-1180)	702
20 years and older	03-04	31.3 (28.6-34.4)	29.2 (26.2-33.0)	63.5 (56.5-73.9)	157 (130-187)	312 (199-457)	1534
	05-06	35.1 (31.5-39.0)	31.3 (28.1-35.7)	72.7 (65.4-82.4)	193 (163-237)	377 (285-460)	1490
Gender							
Males	03-04	37.9 (33.1-43.5)	34.7 (30.0-39.5)	73.7 (60.8-91.9)	187 (133-300)	388 (222-660)	1250
	05-06	43.6 (38.1-49.8)	39.7 (31.9-46.2)	87.0 (76.8-103)	260 (188-308)	460 (347-670)	1270
Females	03-04	31.9 (28.1-36.2)	31.3 (27.5-35.8)	69.3 (58.9-81.9)	154 (128-199)	312 (182-441)	1355
	05-06	34.3 (30.4-38.6)	31.7 (28.0-36.6)	71.0 (63.0-85.3)	192 (156-217)	309 (251-386)	1278
Race/ethnicity							
Mexican Americans	03-04	31.9 (27.1-37.6)	31.5 (26.8-37.4)	57.4 (45.9-71.8)	116 (86.0-162)	175 (133-355)	652
	05-06	39.4 (30.3-51.2)	34.2 (24.1-47.1)	74.6 (54.0-111)	220 (124-338)	394 (222-673)	637
Non-Hispanic blacks	03-04	42.6 (37.0-49.2)	38.3 (33.8-46.9)	82.5 (68.7-103)	191 (146-246)	339 (244-468)	699
	05-06	46.6 (41.3-52.5)	40.3 (35.6-46.1)	96.3 (76.6-132)	256 (208-347)	455 (328-528)	678
Non-Hispanic whites	03-04	33.8 (30.1-37.9)	32.1 (27.6-37.5)	72.4 (62.0-87.7)	167 (133-240)	354 (220-560)	1088
	05-06	37.0 (33.4-41.0)	35.4 (30.4-40.9)	79.7 (70.0-93.3)	203 (174-237)	380 (284-484)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.3 and 0.6.

Urinary Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	03-04	32.6 (29.6-36.0)	27.0 (24.3-30.6)	54.6 (48.0-63.5)	139 (109-186)	251 (192-356)	2605
	05-06	37.6 (33.7-42.0)	32.2 (29.5-37.0)	67.5 (58.2-80.8)	168 (139-209)	290 (261-328)	2548
Age group							
6-11 years	03-04	61.5 (49.0-77.2)	52.2 (41.6-73.8)	104 (74.2-140)	210 (111-500)	372 (192-988)	342
	05-06	63.2 (55.6-71.9)	54.2 (48.1-63.6)	92.8 (82.6-111)	160 (124-247)	312 (172-480)	356
12-19 years	03-04	33.4 (28.7-38.7)	27.1 (23.9-32.0)	55.0 (43.8-83.8)	168 (92.5-289)	294 (159-387)	729
	05-06	39.5 (32.5-47.8)	33.9 (27.9-41.0)	72.7 (56.9-96.7)	197 (106-327)	385 (216-531)	702
20 years and older	03-04	30.1 (27.7-32.7)	25.1 (22.9-27.6)	49.1 (44.1-55.2)	126 (101-154)	237 (191-315)	1534
	05-06	35.2 (31.2-39.6)	29.8 (26.1-33.3)	60.8 (54.2-74.0)	167 (131-206)	279 (247-322)	1490
Gender							
Males	03-04	29.8 (26.8-33.1)	23.5 (21.4-27.1)	50.7 (42.2-61.7)	132 (98.0-191)	248 (159-422)	1250
	05-06	35.0 (30.7-39.9)	29.0 (25.7-32.1)	69.3 (54.2-82.9)	172 (141-210)	301 (249-376)	1270
Females	03-04	35.5 (31.6-40.0)	30.6 (26.4-35.5)	58.3 (48.8-71.8)	144 (108-192)	251 (192-349)	1355
	05-06	40.3 (36.2-44.9)	36.7 (31.6-40.0)	66.1 (58.2-83.7)	168 (127-206)	279 (240-341)	1278
Race/ethnicity							
Mexican Americans	03-04	28.8 (25.4-32.6)	24.7 (22.4-26.3)	46.7 (39.0-56.3)	94.7 (73.2-137)	152 (118-238)	652
	05-06	35.5 (28.7-43.7)	29.8 (25.5-34.9)	61.5 (48.4-86.2)	165 (105-201)	278 (181-501)	637
Non-Hispanic blacks	03-04	30.3 (27.7-33.2)	27.0 (23.2-30.7)	51.1 (41.6-64.0)	135 (100-161)	212 (173-252)	699
	05-06	32.7 (28.9-37.1)	27.1 (22.4-31.5)	62.4 (53.1-76.0)	166 (119-260)	370 (231-429)	678
Non-Hispanic whites	03-04	33.4 (29.5-37.7)	27.0 (23.5-31.6)	56.8 (48.6-69.4)	145 (109-198)	294 (193-385)	1088
	05-06	39.0 (34.9-43.4)	34.3 (30.3-39.1)	69.5 (59.5-83.7)	182 (143-214)	284 (237-324)	1038

Urinary Mono-(carboxynonyl) phthalate (MCNP)

Metabolite of Di-isodecyl phthalates (DiDP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	2.73 (2.50-2.98)	2.70 (2.40-3.00)	5.30 (4.80-5.90)	10.2 (8.80-11.9)	17.5 (14.0-21.4)	2548
Age group							
6-11 years	05-06	4.54 (3.94-5.24)	4.70 (4.00-5.60)	8.10 (6.80-9.60)	14.6 (10.8-19.1)	22.8 (16.7-35.3)	356
12-19 years	05-06	3.18 (2.74-3.68)	3.30 (2.90-3.80)	6.00 (4.70-7.20)	10.3 (7.60-13.7)	16.5 (11.5-21.5)	702
20 years and older	05-06	2.51 (2.27-2.78)	2.40 (2.20-2.70)	4.90 (4.40-5.40)	9.50 (7.90-11.9)	17.0 (13.1-21.5)	1490
Gender							
Males	05-06	3.16 (2.82-3.54)	3.00 (2.70-3.50)	5.90 (5.10-6.90)	11.0 (8.80-14.0)	19.5 (14.0-28.0)	1270
Females	05-06	2.37 (2.13-2.65)	2.30 (2.00-2.70)	4.80 (4.30-5.30)	9.30 (7.60-11.5)	14.7 (13.1-18.2)	1278
Race/ethnicity							
Mexican Americans	05-06	2.72 (2.40-3.08)	2.70 (2.40-3.20)	4.90 (4.30-5.70)	9.00 (7.00-12.4)	14.4 (9.00-26.8)	637
Non-Hispanic blacks	05-06	3.18 (2.75-3.67)	3.20 (2.70-3.80)	5.90 (4.90-7.30)	13.0 (9.50-14.6)	19.2 (14.6-30.5)	678
Non-Hispanic whites	05-06	2.67 (2.39-2.98)	2.60 (2.30-2.90)	5.30 (4.70-6.10)	10.1 (8.20-12.6)	17.6 (12.6-24.3)	1038

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.6.

Urinary Mono-(carboxynonyl) phthalate (MCNP) (creatinine corrected)

Metabolite of Di-isodecyl phthalates (DiDP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	2.66 (2.43-2.91)	2.48 (2.29-2.71)	4.48 (4.05-4.85)	8.67 (7.17-9.71)	13.2 (10.8-17.5)	2548
Age group							
6-11 years	05-06	5.00 (4.45-5.63)	5.06 (4.18-5.76)	7.48 (6.70-8.84)	16.1 (12.5-18.9)	23.5 (16.1-31.7)	356
12-19 years	05-06	2.37 (2.04-2.75)	2.18 (1.91-2.52)	3.64 (2.94-4.55)	6.26 (5.15-8.70)	10.7 (7.57-14.1)	702
20 years and older	05-06	2.52 (2.29-2.78)	2.37 (2.14-2.57)	4.05 (3.77-4.51)	7.90 (6.46-9.40)	12.0 (9.71-16.7)	1490
Gender							
Males	05-06	2.53 (2.28-2.82)	2.36 (2.14-2.56)	4.38 (3.74-5.04)	7.41 (6.47-8.88)	13.0 (9.40-19.6)	1270
Females	05-06	2.79 (2.47-3.15)	2.65 (2.34-2.95)	4.51 (4.03-5.15)	9.41 (6.82-11.6)	13.5 (10.7-19.7)	1278
Race/ethnicity							
Mexican Americans	05-06	2.45 (2.13-2.81)	2.32 (2.14-2.60)	4.04 (3.64-4.58)	6.96 (5.73-8.14)	11.0 (7.89-19.1)	637
Non-Hispanic blacks	05-06	2.24 (1.96-2.55)	1.97 (1.78-2.37)	3.60 (3.25-4.24)	7.82 (6.38-10.4)	12.1 (10.1-17.4)	678
Non-Hispanic whites	05-06	2.81 (2.51-3.14)	2.57 (2.33-2.85)	4.62 (4.10-5.19)	9.26 (7.00-10.8)	13.5 (10.3-23.5)	1038

Urinary Mono-isobutyl phthalate (MiNP)

Metabolite of Di-isobutyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	< LOD	3.50 (<LOD-13.8)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	1.00 (<LOD-1.30)	2605
	05-06	*	< LOD	< LOD	1.10 (.800-1.30)	2.30 (1.50-4.00)	2548
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	6.20 (<LOD-22.5)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	1.00 (<LOD-1.50)	1.70 (1.20-3.10)	342
	05-06	*	< LOD	< LOD	1.10 (<LOD-1.30)	1.40 (1.30-1.70)	356
12-19 years	99-00	*	< LOD	< LOD	< LOD	2.30 (<LOD-20.3)	752
	01-02	*	< LOD	< LOD	< LOD	.900 (<LOD-1.10)	742
	03-04	*	< LOD	< LOD	< LOD	1.40 (<LOD-1.80)	729
	05-06	*	< LOD	< LOD	1.40 (<LOD-2.80)	3.50 (1.30-7.90)	702
20 years and older	99-00	*	< LOD	< LOD	< LOD	3.10 (<LOD-13.2)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	1.00 (<LOD-1.30)	2.30 (1.40-4.20)	1490
Gender							
Males	99-00	*	< LOD	< LOD	.800 (<LOD-5.40)	4.90 (<LOD-18.9)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	1.00 (<LOD-1.80)	1250
	05-06	*	< LOD	< LOD	1.30 (.900-1.90)	2.60 (2.10-4.10)	1270
Females	99-00	*	< LOD	< LOD	< LOD	2.50 (<LOD-6.80)	1326
	01-02	*	< LOD	< LOD	< LOD	.900 (<LOD-1.10)	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	.900 (<LOD-1.00)	1.70 (1.20-2.80)	1278
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	1.50 (<LOD-2.80)	814
	01-02	*	< LOD	< LOD	< LOD	1.00 (<LOD-1.40)	677
	03-04	*	< LOD	< LOD	< LOD	< LOD	652
	05-06	*	< LOD	< LOD	1.00 (.800-1.30)	2.80 (1.30-5.60)	637
Non-Hispanic blacks	99-00	*	< LOD	< LOD	2.30 (<LOD-13.8)	6.80 (<LOD-30.2)	603
	01-02	*	< LOD	< LOD	< LOD	1.00 (<LOD-1.70)	703
	03-04	*	< LOD	< LOD	< LOD	1.30 (1.00-2.00)	699
	05-06	*	< LOD	< LOD	1.30 (1.00-1.80)	3.70 (2.30-5.60)	678
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	3.50 (<LOD-16.0)	912
	01-02	*	< LOD	< LOD	< LOD	< LOD	1216
	03-04	*	< LOD	< LOD	< LOD	< LOD	1088
	05-06	*	< LOD	< LOD	1.00 (<LOD-1.40)	2.10 (1.20-4.20)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.8, 0.8, 1.0, and 0.8 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mono-isonyl phthalate (MiNP) (creatinine corrected)

Metabolite of Di-isomylophthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	< LOD	4.29 (<LOD-8.31)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	2.92 (<LOD-3.18)	2605
	05-06	*	< LOD	< LOD	2.08 (1.78-2.48)	3.35 (2.59-3.68)	2548
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	6.00 (<LOD-14.2)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	2.41 (<LOD-3.13)	3.27 (2.41-4.67)	342
	05-06	*	< LOD	< LOD	1.54 (<LOD-1.90)	1.97 (1.65-3.35)	356
12-19 years	99-00	*	< LOD	< LOD	< LOD	2.00 (<LOD-7.65)	752
	01-02	*	< LOD	< LOD	< LOD	2.07 (<LOD-3.33)	742
	03-04	*	< LOD	< LOD	< LOD	1.97 (<LOD-2.59)	729
	05-06	*	< LOD	< LOD	1.73 (<LOD-2.33)	2.59 (1.93-3.43)	702
20 years and older	99-00	*	< LOD	< LOD	< LOD	4.62 (<LOD-8.07)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	2.19 (<LOD-2.72)	3.36 (2.71-3.97)	1490
Gender							
Males	99-00	*	< LOD	< LOD	2.00 (<LOD-3.71)	4.24 (<LOD-10.2)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	2.31 (<LOD-2.95)	1250
	05-06	*	< LOD	< LOD	1.63 (1.27-2.28)	2.59 (1.81-3.64)	1270
Females	99-00	*	< LOD	< LOD	< LOD	4.29 (<LOD-7.65)	1326
	01-02	*	< LOD	< LOD	< LOD	2.73 (<LOD-2.86)	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	2.38 (<LOD-2.85)	3.49 (3.17-4.07)	1278
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	3.53 (<LOD-5.00)	814
	01-02	*	< LOD	< LOD	< LOD	2.40 (<LOD-2.73)	677
	03-04	*	< LOD	< LOD	< LOD	< LOD	652
	05-06	*	< LOD	< LOD	1.76 (1.43-2.42)	3.17 (2.42-4.07)	637
Non-Hispanic blacks	99-00	*	< LOD	< LOD	2.03 (<LOD-5.31)	4.29 (<LOD-14.3)	603
	01-02	*	< LOD	< LOD	< LOD	1.76 (<LOD-2.14)	703
	03-04	*	< LOD	< LOD	< LOD	2.19 (1.67-2.50)	699
	05-06	*	< LOD	< LOD	1.44 (1.19-1.68)	2.85 (1.84-4.38)	678
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	5.45 (<LOD-10.0)	912
	01-02	*	< LOD	< LOD	< LOD	< LOD	1216
	03-04	*	< LOD	< LOD	< LOD	< LOD	1088
	05-06	*	< LOD	< LOD	2.19 (<LOD-2.59)	3.17 (2.59-3.51)	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mono-(carboxyoctyl) phthalate (MCOP)

Metabolite of Di-isobutyl phthalates (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	5.39 (4.68-6.22)	5.10 (4.40-6.00)	10.9 (9.10-13.1)	25.5 (19.1-35.4)	54.4 (32.5-85.2)	2548
Age group							
6-11 years	05-06	8.52 (7.19-10.1)	8.90 (7.60-9.90)	15.0 (11.3-19.3)	26.4 (19.9-37.3)	40.3 (26.4-61.6)	356
12-19 years	05-06	6.61 (5.42-8.06)	6.30 (5.20-7.30)	11.9 (9.60-16.0)	28.4 (18.2-58.7)	63.2 (28.4-106)	702
20 years and older	05-06	4.96 (4.27-5.76)	4.50 (3.90-5.20)	9.70 (8.20-12.3)	25.1 (18.2-35.7)	54.4 (30.8-88.5)	1490
Gender							
Males	05-06	6.24 (5.25-7.42)	5.70 (4.70-6.90)	12.1 (10.2-15.1)	30.8 (19.0-58.8)	66.4 (33.8-122)	1270
Females	05-06	4.69 (4.14-5.30)	4.50 (4.00-5.20)	9.30 (8.20-11.1)	21.5 (17.5-27.0)	41.7 (28.1-61.7)	1278
Race/ethnicity							
Mexican Americans	05-06	5.77 (4.84-6.87)	5.20 (4.50-5.70)	9.90 (8.50-12.0)	23.6 (14.9-49.7)	54.4 (23.0-185)	637
Non-Hispanic blacks	05-06	6.08 (5.60-6.61)	6.00 (5.10-6.70)	11.4 (10.4-13.0)	24.5 (20.3-28.1)	50.0 (32.0-70.3)	678
Non-Hispanic whites	05-06	5.25 (4.40-6.27)	5.00 (4.10-6.20)	11.1 (8.60-13.6)	25.5 (17.7-43.5)	56.1 (28.1-88.5)	1038

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.7.

Urinary Mono-(carboxyoctyl) phthalate (MCOP) (creatinine corrected)

Metabolite of Di-isobutyl phthalates (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	05-06	5.26 (4.54-6.10)	4.53 (3.95-5.11)	9.25 (7.64-11.2)	24.0 (17.1-30.8)	40.2 (30.3-55.2)	2548
Age group							
6-11 years	05-06	9.38 (8.08-10.9)	8.48 (7.66-10.1)	14.8 (12.2-18.7)	30.3 (20.0-38.8)	40.1 (28.2-57.3)	356
12-19 years	05-06	4.93 (4.10-5.93)	4.32 (3.61-4.89)	7.44 (5.93-11.0)	19.4 (12.4-31.8)	34.7 (24.1-58.3)	702
20 years and older	05-06	4.97 (4.26-5.81)	4.17 (3.68-4.77)	8.58 (7.23-10.6)	23.4 (15.5-31.8)	41.1 (29.2-55.9)	1490
Gender							
Males	05-06	5.01 (4.21-5.97)	4.29 (3.75-5.03)	8.44 (7.17-10.9)	21.6 (15.1-35.4)	44.6 (25.7-85.9)	1270
Females	05-06	5.51 (4.75-6.39)	4.73 (4.23-5.32)	9.55 (8.26-12.2)	24.7 (17.3-30.3)	39.3 (30.3-45.0)	1278
Race/ethnicity							
Mexican Americans	05-06	5.19 (4.38-6.14)	4.50 (3.64-5.29)	8.04 (7.13-10.1)	19.5 (12.3-37.7)	43.6 (20.9-93.4)	637
Non-Hispanic blacks	05-06	4.28 (3.86-4.74)	3.67 (3.26-4.09)	7.60 (6.80-8.81)	17.1 (13.2-21.5)	31.8 (22.5-43.7)	678
Non-Hispanic whites	05-06	5.53 (4.61-6.63)	4.81 (4.13-5.56)	10.0 (7.63-13.3)	25.2 (16.3-34.5)	39.3 (26.8-59.7)	1038

Urinary Mono-methyl phthalate (MMP)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	1.15 (.985-1.34)	1.50 (1.30-1.80)	3.30 (2.90-3.70)	6.00 (5.10-7.50)	9.80 (8.00-12.5)	2782
	03-04	*	1.30 (<LOD-1.70)	3.90 (3.00-4.90)	9.70 (7.70-12.2)	16.3 (12.0-20.4)	2605
	05-06	*	< LOD	2.50 (1.90-3.40)	7.40 (6.10-8.60)	12.4 (10.8-14.7)	2548
Age group							
6-11 years	01-02	1.45 (1.13-1.87)	1.90 (1.40-2.80)	4.00 (3.40-4.90)	7.20 (6.00-8.00)	11.8 (7.60-20.8)	393
	03-04	2.10 (1.67-2.63)	1.70 (1.20-2.40)	4.30 (2.80-6.40)	9.50 (6.40-18.8)	18.8 (9.40-33.4)	342
	05-06	*	< LOD	4.00 (3.30-4.80)	10.6 (7.40-13.4)	15.4 (10.6-30.6)	356
12-19 years	01-02	1.59 (1.28-1.96)	2.10 (1.80-2.50)	3.90 (3.30-4.70)	8.50 (5.30-10.5)	13.0 (9.60-17.8)	742
	03-04	*	1.50 (1.00-2.20)	4.40 (3.00-7.00)	13.3 (7.40-20.9)	21.8 (17.8-31.5)	729
	05-06	*	< LOD	3.70 (2.70-4.60)	8.60 (7.00-9.50)	12.4 (9.30-20.7)	702
20 years and older	01-02	1.06 (.904-1.25)	1.40 (1.10-1.60)	3.10 (2.50-3.50)	5.60 (4.60-7.10)	9.20 (7.40-12.3)	1647
	03-04	*	1.20 (<LOD-1.50)	3.80 (2.80-4.90)	9.30 (7.10-11.8)	14.3 (10.8-19.9)	1534
	05-06	*	< LOD	2.20 (1.60-2.80)	6.90 (5.30-8.40)	11.9 (9.50-14.7)	1490
Gender							
Males	01-02	1.17 (.962-1.43)	1.50 (1.30-1.90)	3.30 (2.90-4.00)	5.90 (4.80-7.90)	9.20 (7.10-13.5)	1371
	03-04	*	1.30 (1.00-1.80)	4.00 (3.20-5.20)	10.0 (7.30-13.5)	17.7 (11.8-20.4)	1250
	05-06	*	< LOD	2.40 (1.80-3.50)	7.40 (5.70-9.20)	13.4 (11.0-15.7)	1270
Females	01-02	1.13 (.973-1.31)	1.40 (1.10-1.70)	3.30 (2.80-3.70)	6.40 (5.00-7.80)	10.3 (8.20-16.2)	1411
	03-04	*	1.20 (<LOD-1.60)	3.60 (2.80-4.70)	9.50 (7.70-12.2)	15.3 (11.7-22.9)	1355
	05-06	*	< LOD	2.60 (1.80-3.40)	7.40 (5.10-9.30)	12.0 (9.30-16.0)	1278
Race/ethnicity							
Mexican Americans	01-02	1.21 (1.02-1.45)	1.60 (1.30-1.70)	3.30 (2.70-4.00)	5.60 (4.70-7.30)	8.60 (6.40-15.2)	677
	03-04	*	1.40 (1.10-1.80)	4.00 (2.50-6.30)	9.60 (7.30-13.4)	15.0 (11.4-18.8)	652
	05-06	*	< LOD	3.10 (2.20-4.30)	7.30 (5.90-9.40)	11.3 (8.50-18.0)	637
Non-Hispanic blacks	01-02	1.64 (1.37-1.98)	2.10 (1.70-2.70)	4.40 (3.60-5.10)	8.30 (6.20-10.1)	11.0 (9.50-13.4)	703
	03-04	2.16 (1.64-2.84)	1.70 (1.00-2.80)	5.10 (3.70-7.00)	11.4 (7.30-17.3)	17.8 (10.2-39.4)	699
	05-06	*	< LOD	3.70 (2.40-4.70)	8.20 (6.10-10.6)	13.0 (10.6-15.8)	678
Non-Hispanic whites	01-02	1.08 (.906-1.29)	1.40 (1.10-1.70)	3.20 (2.50-3.60)	5.60 (4.70-6.70)	9.70 (7.10-14.0)	1216
	03-04	*	1.20 (<LOD-1.60)	3.60 (2.80-4.80)	9.70 (7.50-12.2)	16.5 (12.0-20.4)	1088
	05-06	*	< LOD	2.30 (1.70-2.80)	7.40 (5.50-8.80)	12.5 (10.4-15.0)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.2, 1.0, and 1.1.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mono-methyl phthalate (MMP) (creatinine corrected)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	1.08 (.936-1.25)	1.33 (1.13-1.55)	2.62 (2.36-2.97)	5.00 (3.97-6.02)	8.00 (6.07-11.0)	2782
	03-04	*	1.53 (<LOD-1.79)	3.45 (2.76-4.37)	7.95 (5.83-11.8)	13.5 (11.3-18.1)	2605
	05-06	*	< LOD	2.85 (2.52-3.25)	6.53 (5.49-7.67)	12.2 (9.74-14.3)	2548
Age group							
6-11 years	01-02	1.65 (1.28-2.14)	2.32 (1.72-2.86)	3.97 (3.27-4.71)	7.20 (5.99-9.41)	13.2 (7.60-22.5)	393
	03-04	2.22 (1.75-2.81)	1.88 (1.49-2.60)	4.96 (2.81-6.49)	9.67 (6.15-14.6)	16.2 (12.1-34.5)	342
	05-06	*	< LOD	4.59 (3.09-6.35)	11.0 (8.07-15.0)	18.6 (10.4-21.9)	356
12-19 years	01-02	1.23 (1.01-1.48)	1.51 (1.32-1.82)	2.84 (2.52-3.33)	5.36 (3.68-6.39)	7.27 (5.64-11.4)	742
	03-04	*	1.34 (1.12-1.73)	3.19 (2.26-4.43)	7.84 (4.95-12.1)	13.3 (9.49-19.1)	729
	05-06	*	< LOD	2.80 (2.15-3.55)	5.65 (4.33-6.52)	12.4 (6.45-18.9)	702
20 years and older	01-02	1.00 (.868-1.16)	1.21 (1.05-1.40)	2.44 (2.14-2.68)	4.53 (3.49-6.02)	7.72 (5.52-11.4)	1647
	03-04	*	1.52 (<LOD-1.79)	3.39 (2.69-4.31)	7.69 (5.40-11.8)	13.3 (10.1-18.9)	1534
	05-06	*	< LOD	2.76 (2.44-3.12)	6.09 (5.00-7.75)	11.2 (9.17-13.4)	1490
Gender							
Males	01-02	.954 (.794-1.15)	1.17 (1.02-1.40)	2.37 (2.03-2.75)	4.18 (3.45-5.64)	6.42 (4.94-9.59)	1371
	03-04	*	1.35 (1.15-1.52)	2.95 (2.26-4.09)	7.11 (5.00-10.2)	11.8 (9.05-13.3)	1250
	05-06	*	< LOD	2.19 (1.89-2.50)	5.03 (4.09-6.45)	10.2 (7.75-13.4)	1270
Females	01-02	1.21 (1.06-1.38)	1.45 (1.23-1.82)	2.87 (2.58-3.06)	5.56 (4.55-7.14)	10.0 (7.20-15.3)	1411
	03-04	*	1.83 (<LOD-2.10)	3.87 (3.04-4.96)	9.41 (6.41-13.6)	16.5 (12.5-23.5)	1355
	05-06	*	< LOD	3.47 (3.00-4.11)	7.67 (6.00-9.75)	13.2 (9.75-18.7)	1278
Race/ethnicity							
Mexican Americans	01-02	1.14 (.975-1.34)	1.48 (1.30-1.63)	2.50 (2.20-2.94)	4.19 (3.77-5.76)	8.47 (5.58-12.5)	677
	03-04	*	1.36 (1.15-1.71)	3.56 (2.45-4.90)	7.53 (5.62-9.64)	12.5 (9.44-16.9)	652
	05-06	*	< LOD	2.86 (2.07-3.67)	6.48 (4.21-8.24)	11.5 (6.94-21.7)	637
Non-Hispanic blacks	01-02	1.15 (.949-1.40)	1.39 (1.29-1.67)	2.70 (2.36-2.95)	4.87 (4.21-5.93)	8.09 (5.86-11.0)	703
	03-04	1.53 (1.21-1.94)	1.40 (1.07-1.75)	3.14 (2.26-4.37)	7.50 (4.29-14.6)	13.7 (7.70-20.7)	699
	05-06	*	< LOD	2.59 (1.87-3.28)	5.20 (4.53-6.29)	8.50 (6.79-10.3)	678
Non-Hispanic whites	01-02	1.07 (.914-1.26)	1.30 (1.05-1.58)	2.62 (2.32-2.99)	5.22 (3.68-6.82)	8.26 (6.07-12.6)	1216
	03-04	*	1.56 (<LOD-1.89)	3.50 (2.71-4.67)	8.10 (6.00-11.9)	13.6 (11.3-18.9)	1088
	05-06	*	< LOD	2.98 (2.60-3.39)	7.19 (5.58-9.51)	13.4 (10.4-16.6)	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mono-(3-carboxypropyl) phthalate (MCPP)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	2.75 (2.49-3.04)	3.10 (2.80-3.30)	5.70 (5.10-6.40)	10.0 (8.90-11.3)	14.6 (12.7-17.5)	2782
	03-04	2.91 (2.79-3.04)	3.10 (3.00-3.30)	5.70 (5.20-6.10)	10.2 (9.20-11.8)	15.3 (13.8-16.2)	2605
	05-06	2.05 (1.87-2.26)	2.10 (1.90-2.40)	4.40 (4.00-4.80)	8.90 (7.60-10.1)	13.1 (10.6-17.4)	2548
Age group							
6-11 years	01-02	6.11 (5.46-6.84)	6.70 (5.40-7.50)	11.8 (10.2-13.3)	20.1 (17.8-23.1)	24.7 (22.2-31.6)	393
	03-04	6.86 (5.80-8.11)	7.10 (6.00-8.90)	12.7 (10.4-16.4)	22.0 (17.2-27.7)	29.2 (22.3-36.6)	342
	05-06	4.82 (4.09-5.68)	4.90 (4.30-5.90)	8.50 (6.70-10.4)	13.1 (10.3-17.9)	17.9 (12.6-34.5)	356
12-19 years	01-02	3.71 (3.18-4.33)	4.00 (3.40-4.70)	7.10 (6.10-8.10)	11.5 (9.50-12.7)	14.1 (11.8-19.0)	742
	03-04	3.72 (3.33-4.15)	4.10 (3.50-4.60)	7.20 (5.80-8.40)	11.0 (9.50-13.6)	15.4 (13.4-17.9)	729
	05-06	2.96 (2.52-3.46)	3.10 (2.50-3.60)	5.90 (4.80-7.30)	11.8 (9.10-14.5)	17.0 (12.7-21.5)	702
20 years and older	01-02	2.37 (2.11-2.66)	2.60 (2.20-3.00)	4.80 (4.30-5.40)	8.10 (7.20-9.50)	12.0 (10.1-14.2)	1647
	03-04	2.53 (2.41-2.66)	2.80 (2.60-2.90)	4.90 (4.50-5.20)	8.10 (7.50-8.90)	13.2 (10.8-14.3)	1534
	05-06	1.76 (1.60-1.93)	1.70 (1.60-2.00)	3.60 (3.20-4.10)	7.10 (6.10-8.40)	11.3 (9.60-13.6)	1490
Gender							
Males	01-02	2.89 (2.64-3.17)	3.10 (2.80-3.40)	5.70 (5.00-6.80)	9.90 (8.70-12.0)	14.2 (12.4-18.1)	1371
	03-04	3.25 (3.01-3.52)	3.30 (3.00-3.60)	6.00 (5.60-6.80)	11.8 (10.1-13.6)	16.0 (14.2-20.0)	1250
	05-06	2.32 (2.11-2.54)	2.40 (2.00-2.70)	4.70 (4.30-5.20)	9.60 (7.90-11.8)	14.5 (11.5-22.3)	1270
Females	01-02	2.62 (2.29-2.99)	3.00 (2.50-3.30)	5.70 (5.00-6.30)	10.0 (8.50-11.5)	14.7 (11.2-20.3)	1411
	03-04	2.63 (2.44-2.83)	3.00 (2.60-3.20)	5.20 (4.70-5.80)	9.20 (8.20-10.3)	13.4 (11.0-16.2)	1355
	05-06	1.83 (1.59-2.10)	1.80 (1.60-2.10)	4.00 (3.30-4.60)	8.00 (6.60-9.50)	12.1 (9.50-14.7)	1278
Race/ethnicity							
Mexican Americans	01-02	2.67 (2.26-3.16)	3.00 (2.30-3.50)	5.30 (4.40-5.90)	9.20 (7.30-12.4)	13.6 (10.4-18.7)	677
	03-04	3.08 (2.86-3.32)	3.10 (2.80-3.40)	5.50 (4.80-6.10)	9.90 (7.90-12.6)	13.7 (11.5-19.8)	652
	05-06	2.24 (1.71-2.94)	2.20 (1.60-3.10)	4.50 (3.30-6.50)	9.40 (6.50-13.1)	14.1 (9.90-25.4)	637
Non-Hispanic blacks	01-02	3.09 (2.81-3.40)	3.30 (2.90-3.60)	6.30 (5.50-6.50)	10.9 (9.10-13.0)	15.1 (13.5-22.4)	703
	03-04	3.30 (3.01-3.62)	3.20 (2.90-3.60)	6.10 (5.50-6.90)	11.6 (9.30-13.4)	20.1 (13.6-25.5)	699
	05-06	2.28 (2.03-2.57)	2.40 (2.10-2.80)	4.50 (3.80-5.60)	8.70 (7.10-10.3)	13.3 (10.4-16.5)	678
Non-Hispanic whites	01-02	2.72 (2.40-3.08)	3.00 (2.60-3.30)	5.80 (4.80-6.80)	10.3 (8.90-11.9)	15.8 (12.6-19.5)	1216
	03-04	2.87 (2.73-3.02)	3.10 (2.90-3.30)	5.60 (5.00-6.00)	10.1 (9.10-12.0)	15.2 (13.4-16.1)	1088
	05-06	1.97 (1.81-2.15)	2.00 (1.80-2.20)	4.20 (3.80-4.60)	8.70 (6.80-10.3)	13.1 (10.0-17.5)	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.4, 0.2, and 0.2.

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (creatinine corrected)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	01-02	2.58 (2.35-2.83)	2.47 (2.25-2.76)	4.08 (3.87-4.48)	7.24 (6.58-8.00)	11.4 (10.0-12.5)	2782
	03-04	2.74 (2.56-2.93)	2.60 (2.42-2.79)	4.39 (3.94-4.86)	7.70 (6.65-8.60)	10.7 (9.53-11.9)	2605
	05-06	2.00 (1.82-2.20)	1.86 (1.67-2.06)	3.55 (3.14-4.00)	6.80 (5.77-7.95)	10.3 (8.68-12.7)	2548
Age group							
6-11 years	01-02	6.96 (6.29-7.70)	7.08 (5.83-7.87)	11.2 (9.15-14.0)	20.7 (15.5-22.3)	26.4 (20.7-27.0)	393
	03-04	7.25 (6.43-8.18)	7.06 (5.93-7.59)	11.2 (9.38-12.4)	19.1 (14.4-25.6)	26.9 (19.3-29.0)	342
	05-06	5.31 (4.57-6.17)	5.06 (4.57-5.79)	8.78 (7.50-10.0)	13.7 (10.2-21.3)	21.3 (13.2-36.7)	356
12-19 years	01-02	2.86 (2.52-3.25)	2.94 (2.50-3.36)	4.59 (4.03-5.23)	6.69 (6.30-7.25)	9.55 (8.03-10.7)	742
	03-04	2.78 (2.54-3.05)	2.75 (2.53-2.99)	4.55 (4.05-5.15)	6.61 (6.15-7.20)	8.24 (7.00-10.2)	729
	05-06	2.20 (1.90-2.55)	2.07 (1.76-2.46)	3.67 (2.99-4.39)	6.84 (5.35-8.67)	9.67 (7.12-11.4)	702
20 years and older	01-02	2.24 (2.03-2.47)	2.20 (2.00-2.40)	3.51 (3.11-3.95)	5.39 (4.82-6.18)	7.71 (6.71-9.28)	1647
	03-04	2.43 (2.27-2.61)	2.38 (2.19-2.56)	3.70 (3.33-4.08)	6.09 (5.38-7.06)	8.79 (7.84-9.56)	1534
	05-06	1.76 (1.60-1.94)	1.67 (1.47-1.86)	2.96 (2.60-3.38)	5.55 (4.61-6.46)	8.46 (7.00-10.3)	1490
Gender							
Males	01-02	2.35 (2.17-2.56)	2.20 (2.02-2.42)	3.76 (3.45-4.20)	7.17 (6.27-8.06)	11.5 (9.28-15.1)	1371
	03-04	2.55 (2.39-2.72)	2.36 (2.22-2.47)	4.14 (3.52-4.86)	7.84 (6.80-8.79)	11.6 (10.2-13.5)	1250
	05-06	1.86 (1.70-2.03)	1.70 (1.53-1.88)	3.33 (2.92-3.70)	6.70 (5.59-8.33)	10.7 (8.72-14.2)	1270
Females	01-02	2.81 (2.48-3.18)	2.76 (2.46-3.02)	4.39 (3.97-4.92)	7.66 (6.17-8.69)	11.0 (8.62-15.9)	1411
	03-04	2.93 (2.68-3.20)	2.89 (2.58-3.23)	4.53 (4.09-5.00)	7.58 (6.44-8.57)	10.0 (8.60-11.6)	1355
	05-06	2.15 (1.88-2.45)	2.00 (1.72-2.44)	3.77 (3.15-4.47)	6.90 (5.62-8.43)	10.0 (8.14-12.5)	1278
Race/ethnicity							
Mexican Americans	01-02	2.52 (2.21-2.88)	2.37 (2.07-2.73)	4.29 (3.73-5.00)	7.36 (5.58-10.3)	11.4 (8.36-14.5)	677
	03-04	2.78 (2.56-3.02)	2.63 (2.30-2.96)	4.32 (3.66-4.96)	8.14 (6.72-10.3)	12.8 (9.37-17.1)	652
	05-06	2.02 (1.62-2.51)	1.79 (1.42-2.53)	3.85 (2.74-5.22)	7.00 (5.40-8.82)	10.2 (7.64-16.4)	637
Non-Hispanic blacks	01-02	2.17 (2.02-2.33)	2.07 (1.88-2.28)	3.68 (3.25-4.07)	6.73 (5.46-7.70)	10.0 (8.27-13.1)	703
	03-04	2.34 (2.13-2.58)	2.17 (1.99-2.45)	3.96 (3.33-4.43)	6.93 (6.03-8.80)	13.4 (9.32-15.9)	699
	05-06	1.61 (1.42-1.81)	1.58 (1.38-1.77)	2.76 (2.27-3.37)	5.63 (4.33-7.59)	8.68 (6.86-10.4)	678
Non-Hispanic whites	01-02	2.69 (2.42-3.00)	2.57 (2.25-2.94)	4.19 (3.87-4.79)	7.63 (6.58-8.45)	11.8 (10.0-14.7)	1216
	03-04	2.83 (2.60-3.09)	2.65 (2.43-2.96)	4.55 (3.90-5.16)	7.79 (6.59-8.79)	10.6 (9.43-11.3)	1088
	05-06	2.08 (1.92-2.24)	1.95 (1.76-2.12)	3.60 (3.26-4.00)	6.47 (5.56-7.93)	10.3 (7.95-13.1)	1038

Urinary Mono-n-octyl phthalate (MOP)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	1.60 (1.20-2.00)	2.90 (2.30-3.40)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	< LOD	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
Age group							
6-11 years	99-00	*	< LOD	< LOD	2.20 (.900-3.50)	3.20 (1.70-5.00)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	< LOD	< LOD	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
12-19 years	99-00	*	< LOD	< LOD	1.70 (.900-2.50)	2.80 (2.00-4.20)	752
	01-02	*	< LOD	< LOD	< LOD	< LOD	742
	03-04	*	< LOD	< LOD	< LOD	< LOD	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
20 years and older	99-00	*	< LOD	< LOD	1.50 (1.10-1.90)	2.90 (2.10-3.50)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
Gender							
Males	99-00	*	< LOD	< LOD	1.60 (1.10-2.20)	2.80 (2.00-3.50)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	< LOD	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
Females	99-00	*	< LOD	< LOD	1.50 (1.20-2.10)	3.10 (2.20-3.80)	1326
	01-02	*	< LOD	< LOD	< LOD	< LOD	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	1.10 (<LOD-1.40)	1.60 (1.40-2.60)	814
	01-02	*	< LOD	< LOD	< LOD	< LOD	677
	03-04	*	< LOD	< LOD	< LOD	< LOD	652
	05-06	*	< LOD	< LOD	< LOD	< LOD	637
Non-Hispanic blacks	99-00	*	< LOD	< LOD	1.90 (<LOD-3.00)	3.00 (2.20-4.10)	603
	01-02	*	< LOD	< LOD	< LOD	< LOD	703
	03-04	*	< LOD	< LOD	< LOD	< LOD	699
	05-06	*	< LOD	< LOD	< LOD	< LOD	678
Non-Hispanic whites	99-00	*	< LOD	< LOD	1.60 (1.20-2.10)	3.00 (2.30-3.50)	912
	01-02	*	< LOD	< LOD	< LOD	< LOD	1216
	03-04	*	< LOD	< LOD	< LOD	< LOD	1088
	05-06	*	< LOD	< LOD	< LOD	< LOD	1038

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 05-06 are 0.9, 1.0, 1.0, and 1.1 respectively.

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Mono-n-octyl phthalate (MOP) (creatinine corrected)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total	99-00	*	< LOD	< LOD	2.40 (2.07-2.61)	3.53 (2.95-4.29)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	< LOD	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
Age group							
6-11 years	99-00	*	< LOD	< LOD	2.22 (1.60-3.75)	3.75 (1.97-10.3)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	< LOD	< LOD	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
12-19 years	99-00	*	< LOD	< LOD	1.49 (1.29-1.71)	1.88 (1.54-3.33)	752
	01-02	*	< LOD	< LOD	< LOD	< LOD	742
	03-04	*	< LOD	< LOD	< LOD	< LOD	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
20 years and older	99-00	*	< LOD	< LOD	2.60 (2.07-2.91)	3.53 (3.00-4.62)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
Gender							
Males	99-00	*	< LOD	< LOD	1.82 (1.54-2.07)	2.56 (1.94-3.45)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	< LOD	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
Females	99-00	*	< LOD	< LOD	3.00 (2.50-3.55)	4.29 (3.33-6.23)	1326
	01-02	*	< LOD	< LOD	< LOD	< LOD	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	1.82 (<LOD-2.80)	3.33 (2.60-4.00)	814
	01-02	*	< LOD	< LOD	< LOD	< LOD	677
	03-04	*	< LOD	< LOD	< LOD	< LOD	652
	05-06	*	< LOD	< LOD	< LOD	< LOD	637
Non-Hispanic blacks	99-00	*	< LOD	< LOD	1.36 (<LOD-1.94)	2.22 (1.50-3.27)	603
	01-02	*	< LOD	< LOD	< LOD	< LOD	703
	03-04	*	< LOD	< LOD	< LOD	< LOD	699
	05-06	*	< LOD	< LOD	< LOD	< LOD	678
Non-Hispanic whites	99-00	*	< LOD	< LOD	2.61 (2.14-3.08)	3.64 (3.15-5.00)	912
	01-02	*	< LOD	< LOD	< LOD	< LOD	1216
	03-04	*	< LOD	< LOD	< LOD	< LOD	1088
	05-06	*	< LOD	< LOD	< LOD	< LOD	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Appendix C. References for Biomonitoring Analytical Methods

Cotinine

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Perfluorochemicals

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Silva MJ, Malek NA, Hodge CC, Reidy JA, Kato K, Barr DB, et al. Improved quantitative detection of 11 urinary phthalate metabolites in humans using liquid chromatography-atmospheric pressure chemical ionization tandem mass spectrometry. *J Chromatog B* 2003;789:393-404.

Silva MJ, Slakman AR, Reidy JA, Preau JLJ, Herbert AR, Samandar E, et al. Analysis of human urine for 15 phthalate metabolites using automated solid-phase extraction. *J Chromatog B* 2004;805:161-7.

Appendix D. Limit of Detection Table

The analytical limit of detection (LOD) for each of the different chemical measurements is presented in the table below. The LOD is the level at which the measurement has a 95% probability of being greater than zero (Taylor, 1987).

As analytical methods improve, LODs will often change. For this reason, LOD results are reported by survey periods (e.g., 1999-2000, 2001-2002, 2003-2004).

Reference: Taylor JK. *Quality Assurance of Chemical Measurements*. Chelsea (MI): Lewis Publishing. 1987.

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006
Cotinine	serum	ng/mL	0.05	0.05	0.015	0.02
Environmental Phenols						
Bisphenol A (2,2-bis[4-Hydroxyphenyl] propane)	urine	µg/L		0.4	0.4	
Benzophenone-3 (2-Hydroxy-4-methoxybenzophenone)	urine	µg/L		0.3	0.4	
4- <i>tert</i> -Octylphenol (4-[1,1,3,3-Tetramethylbutyl] phenol)	urine	µg/L			0.2	
Triclosan (2,4,4'-Trichloro-2'-hydroxyphenyl ether)	urine	µg/L		2.3	2.3	
Metals						
Antimony	urine	µg/L	0.04	0.04	0.07	0.032
Arsenic, Total	urine	µg/L		0.74	0.74	
Arsenic (V) Acid	urine	µg/L		1.0	1.0	
Arsenobetaine	urine	µg/L		0.4	0.4	
Arsenocholine	urine	µg/L		0.6	0.6	
Arsenous (III) Acid	urine	µg/L		1.2	1.2	
Dimethylarsinic Acid	urine	µg/L		1.7	1.7	
Monomethylarsonic Acid	urine	µg/L		0.9	0.9	
Trimethylarsine oxide	urine	µg/L		1.0	1.0	
Barium	urine	µg/L	0.12	0.12	0.31	0.12
Beryllium	urine	µg/L	0.13	0.13	0.13	0.072
Cadmium	blood	µg/L	0.3	0.3	0.14	0.2
Cadmium	urine	µg/L	0.06	0.06	0.06	0.042
Cesium	urine	µg/L	0.14	0.14	0.2	0.066
Cobalt	urine	µg/L	0.07	0.07	0.08	0.041
Lead	blood	µg/dL	0.3	0.3	0.28	0.25
Lead	urine	µg/L	0.1	0.1	0.33	0.1
Mercury, Inorganic	blood	µg/L		0.42	0.4	
Mercury, Total	blood	µg/L	0.14	0.14	0.2	0.33
Mercury	urine	µg/L	0.14	0.14	0.14	0.11
Molybdenum	urine	µg/L	0.8	0.8	1.5	0.92
Platinum	urine	µg/L	0.04	0.04	0.07	0.009
Thallium	urine	µg/L	0.02	0.02	0.02	0.015
Tungsten	urine	µg/L	0.04	0.04	0.04	0.021
Uranium	urine	µg/L	0.004	0.004	0.005	0.002
Parabens						
Butyl paraben	urine	µg/L			0.2	
Ethyl paraben	urine	µg/L			1.0	
Methyl paraben	urine	µg/L			1.0	
<i>n</i> -Propyl paraben	urine	µg/L			0.2	
Perfluorinated Compounds						
Perfluorobutane sulfonic acid (PFBuS)	serum	µg/L		0.4	0.1	
Perfluorodecanoic acid (PFDeA)	serum	µg/L		0.3	0.2	
Perfluorododecanoic acid (PFDoA)	serum	µg/L		1.0	0.2	
Perfluoroheptanoic acid (PFHpA)	serum	µg/L		0.3	0.4	
Perfluorohexane sulfonic acid (PFHxS)	serum	µg/L		0.3	0.1	
Perfluorononanoic acid (PFNA)	serum	µg/L		0.1	0.1	
Perfluorooctanoic acid (PFOA)	serum	µg/L		0.1	0.1	
Perfluorooctane sulfonic acid (PFOS)	serum	µg/L		0.4	0.2	
Perfluorooctane sulfonamide (PFOSA)	serum	µg/L		0.2	0.1	
2-(N-Ethyl-perfluorooctane sulfonamido) acetic acid (Et-PFOSA-AcOH)	serum	µg/L		0.4	0.2	
2-(N-Methyl-perfluorooctane sulfonamido) acetic acid (Me-PFOSA-AcOH)	serum	µg/L		0.6	0.2	
Perfluoroundecanoic acid (PFUA)	serum	µg/L		0.3	0.2	

Appendix D. Limit of Detection Table

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006
Phthalate Metabolites						
Mono-benzyl phthalate (MBzP)	urine	µg/L	0.8	0.3	0.1	0.3
Mono-isobutyl phthalate (MiBP)	urine	µg/L		1.0	0.3	0.3
Mono-n-butyl phthalate (MnBP)	urine	µg/L	0.9	1.1	0.4	0.6
Mono-(carboxynonyl) phthalate (MCNP)	urine	µg/L				0.6
Mono-(carboxyoctyl) phthalate (MCOP)	urine	µg/L				0.7
Mono-cyclohexyl phthalate (MCHP)	urine	µg/L	0.9	0.3	0.2	0.3
Mono-ethyl phthalate (MEP)	urine	µg/L	1.2	0.9	0.4	0.8
Mono-2-ethylhexyl phthalate (MEHP)	urine	µg/L	1.2	1.0	0.9	1.2
Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)	urine	µg/L		1.0	0.3	0.7
Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)	urine	µg/L		1.1	0.5	0.7
Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)	urine	µg/L			0.3	0.6
Mono-isonyl phthalate (MiNP)	urine	µg/L	0.8	0.8	1.0	0.8
Mono-methyl phthalate (MMP)	urine	µg/L		0.2	1.0	1.1
Mono-(3-carboxypropyl) phthalate (MCPP)	urine	µg/L		0.4	0.2	0.2
Mono-n-octyl phthalate (MOP)	urine	µg/L	0.9	1.0	1.0	1.1



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